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ISRAELI POLICIES TOWARDS IMPORTS
OF MANUFACTURED GOODS

by

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ISRAELI POLICIES TOWARDS IMPORTS OF MANUFACTURED GOODS[x]

In this paper the policy of the Israeli government towards imports of manufactured goods is examined. This policy has passed throuth two distinct phases. In the 1950s quantitative restrictions on imports were enforced to stimulate domestic production of import substitutes. In the 1960s the deleterious effects of protectionist policies on resource allocation were recognized and the emphasis was changed in favour of import liberalization, i.e. the replacement of quantitative restrictions by tariffs and the eventual reduction of the tariffs. In recognition of the discontinuity of import policy the paper is divided into two parts reflecting the two phases.

The frame of reference of the paper is determined by the wider research project of which it is part, i.e. import policy is examined as a means of influencing the rate of growth and the nature of the industrial sector during the process of economic development. Israel is of special interest in this context because of its extremely rapid economic development, both generally and in the industrial sector, and is arguably the only country to have changed its status from an LDC to a developed country in the postwar era. Study of the role of trade policy in this rapid development may provide useful lessons for other LDCs. Israel has of course had certain advantages over other LDCs (especially her large capital inflow and initial endowment of human capital), but her problem of reducing the trade deficit opened up by the pressures of economic development is simular to that of most other LDCs. Furthermore, her initial response in terms of encouraging import substitution by protecting domestic producers is one which appealed to many LDCs in the past, and thus the consequences of this policy and the problems of later reducing the level of protection are issues of wide applicability.

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As a preliminary to the paper some comment on the choice of terminal dates is appropriate. The starting date is intended to reflect the beginning of the economic existence of Israel as an independent state. 1950 was selected, rather than 1948 when the state was officially founded, for three reasons: (i) there exist no data for 1948-9 on economic magnitudes such as GNP, (ii) 1948-9 were war years with great disruption of economic activity, (iii) by the end of 1949 practically all abandoned Arab property which was to be reused had been brought into economic production. Thus, only after 1950 can the behaviour of the Israeli economy be taken as indicative of its normal functioning (Patinkin, p. 18). The closing date of the first part of the paper marks the adoption in February 1962 of the New Economic Policy, which was intended to expose domestic producers (gradually) to foreign competition. In order to assist orientation of readers unfamiliar with the Israeli economy some indicators for the years 1950, 1962 and 1972 are given in Table I.

1. Industrialization By Import Substitution 1950-62

The aim of this part of the paper is to make an assessment of the Israeli government's policy between 1950 and 1962 of encouraging industrial development by means of import substitution. The first section deals with the reasons why such a policy was adopted and also serves as an introduction to some of the issues concerning import substitution policies. In section II we turn to the questions of how the policy was implemented and how strongly the goal was pursued, i.e. what was the extent of the protection offered to domestic producers. In section III various measures of the success of the policy, i.e. the amount of import substitution that took place and its contribution to Israel's economic growth in the period, are given. Section IV deals with the costs of the policy in terms of misallocation of resources. Finally, the results are brought together and some conclusions drawn from them in section V.

Table I

Selected Economic Indicators; Israel 1950 and 1962

	1950	1962	1972
Population	1,266,753	2,288,200	3,146,200
Area (square miles)	8,017	8,017	34,493[b]
GNP at market prices (I £ millions current prices)	460	6,256	28,958
GNP at market prices (I £ millions 1964 prices)	2,124	7,151	16,200
Imports ($ thousand)	300,325	626,222	1,957,538[c]
Exports ($ thousand)	35,147	271,403	1,101,892
Import deficit ($ thousand)	265,178	354,819	855,646
Consumer Price Index (1959 = 100)	31	120	223
Exchange rate (I £ per $)	0.357	3.0[a]	4.2

Notes: [a] after devaluation of February 1962; - [b] including administered territories; - [c] excluding trade with the administered territories.

Source: Central Bureau of Statistics: Statistical Abstract of Israel, various years.

In adopting a policy of encouraging import substitution in the 1950s Israel was similar to many other LDCs. The reasons for this general trend have been dealt with many times (e. g., Little, Scitovsky & Scott) and there is little point in going into detail here. Essentially the arguments were twofold, one negative and one positive. First, there was the disaffection with export-led growth following the disruption of world markets during the depression of the 1930s and the 1939-45 world war. Second, there was the desire for greater independence which it was hoped that autarchic economic development would bring.

For Israel these arguments were reinforced by her status as a new country. The mass immigration between 1948 and 1951, which more than doubled the Jewish population, had increased demand faster than domestic supply and thus almost all goods were to some extent imported. Government policy to reduce the trade deficit was at first concentrated on reducing food imports, but in such a situation almost any domestic production (apart from the two major exports, diamonds and citrus) was bound to be import substituting. Thus in the early 1950s some of Israel' s economic development was going to be import substituting whether the government planned it or not, and we would expect Chenery-type measures of the contribution of import substitution to economic growth to be high in these early years (cf. section III).

Israeli government policy in the 1950s was, however, much more than a laissez faire policy which happened to result in import substitution. The extent of protection offered to import substitutors was great and remained so throughout the 1950-62 period, i. e., until long after the initial effect discussed in the previous paragraph had exhausted itself. The positive espousal of an import substitution policy no doubt reflected the conventional wisdom of the time[1], and this was emphasised by Israel' s own military and

[1] Disruption of world trade between 1939 and 1945 had not only turned the Palestinian Jews against an export expansion policy (because of disastrous effects on citrus exports), but had also turned them in favour of protective barriers because the period had been a prosperous one. The 1939-45 prosperity had, however, rested on the preeminent position of Palestinian manufacturing industry (which was mainly Jewish owned) in supplying military and regional demands in the Middle East as a whole, rather than on production for domestic demand.

political situation. The geopolitical situation in the Middle East made a policy aimed at economic self-sufficiency particularly attractive. Also the desire to construct a modern economy led to detailed government intervention in the economy, - an intervention better suited to preventing imports than to encouraging exports.

The old controversy of import substitution versus export promotion has now been raised and may be dealt with at this point. For a country which has a trade deficit there are two ways of removing the deficit; either increase exports or reduce imports. Of course both can occur simultaneously and some policies may serve both goals (e. g., an undervalued currency if demand curves are elastic). The problem is, however, often posed as one of encouraging specific industries, of which some produce import substitutes (e. g., machinery in Israel) and others produce exports (e. g., citrus). Thus the dichotomy can be raised of whether to encourage import substituting or export industries. Even stated in these terms there is not necessarily a contradiction; it all depends upon the shape of the demand and supply functions. If demand is elastic, transport costs small and there are constant returns to scale, then the most efficient import substituting industry will also be the most efficient exporter, and there will be a unique ranking of which industries should be encouraged irrespective of the government' s predilection for import substitution or export promotion. The restictions necessary for this conclusion are, however, rather rigid. For example, failure to expand very rapidly the two industries where Israel had a clear comparative advantage may be explained by a belief that Israel' s exports of citrus and diamonds faced a downward-sloping demand curve[2]. The assumption of constant returns to scale is also a rather dubious generalization, especially when applied to the medium and long-term. Nevertheless the technique of using the domestic resource cost of a dollar saved or a dollar earned can still be used to

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[2] Citrus and diamonds accounted for 91 % of Israel' s gross export proceeds in 1949 (Rubner pp. 19-20).

determine which industries are most efficient at the margin, and, depending, for example, on whether the industry is still on a downward-sloping section of its cost curve, it provides a guide as to which industries should be encouraged. Thus, with a certain degree of sophistication among government economists, the rule of thumb for resource allocation which depends on a dichotomy between import substitution and export promotion is no longer useful. The question which will be raised in section IV is to what extent reliance on such a rule of thumb was harmful to resource allocation in Israel.

The arguments of this section can now be restated. Because of Israel's peculiar situation as an almost new economy some of the increase in domestic production in the early 1950s was necessarily import substituting. Conceptually this should be separated from the import substituting production which resulted from the government policies in this direction. The extent to which government policies followed the rule of thumb of encouraging industries producing import substitutes is examined in the next section, where it will be seen that such a rule was almost invariably utilized. Reliance on such a rule will in general not lead to optimal resource allocation and the extent of the misallocation is analyzed in section IV.

II

During the period 1950-62 the Israeli pound was devalued by 769 %. After the declaration of Israel's independence in 1948 the Israeli pound was retained at a par with sterling and followed the sterling devaluation of September 1949 to a rate of £ 0.357 per U.S. dollar. The high rate of inflation and heavy demand for imports 1949-52 soon rendered this rate unrealistic and in 1952 two other rates were adopted for trade purposes, although 0.357 remained the official rate. The official rate was set at I£1/$ in December 1953, only to be abolished in August 1954 when a single formal rate of I£1.8/$ replaced the three existing rates[3]. This was de-

[3] Except for transactions by institutions which were carried out at I£1.3/$ August 1954-Ocotober 1955 and at I£1.5/$ October 1955-April 1958.

cleared the official rate of exchange in July 1955 and remained so until the devaluation of February 1962 when a rate of I£3/$ was adopted.

The devaluation of the Israeli pound was an adjustment process in the face of its continued overvaluation, i.e. the demand for foreign currency exceeded supply at the going exchange rate. An overvalued currency encourages imports and the government used two policy tools to restrict the level of imports: tariffs and physical restrictions. It has generally been considered that the latter were the more important. The only empirical study, however, is Gafni, Halevi and Hanoch's attempt to categorize the tariffs of 1955/6. They distinguish between (a) "revenue" tariffs, which do not reduce the amount imported because domestic demand is inelastic in the relevant range (usually because a quota is the binding constraint on the increased imports, rather than the price), (b) "import-diminishing" tariffs, which reduce imports, but do not increase domestic supply, (c) "protective" tariffs, which reduce imports and increase domestic production. Of their sample, 42.9 % of total imports had a revenue duty (of which 24.2 % were goods produced in Israel and 18.7 % not produced in Israel), 49.9 % an import-diminishing duty and 7.2 % a protective duty. Thus, on the majority of imported commodities tariffs were more significant than quotas in reducing imports[4]. In terms of protection for domestic industries, however, the opposite is the case with over three quarters of the burden being born by quotas. Thus Halevi concludes elsewhere that:

> "Protective customs duties were levied more as insurance against imports which, could slip by than as a basic means of protection." (Halevi and Klinov-Malul, p. 238).

Implementation of the administrative restrictions involved a two-stage process. A potential importer had first to obtain a licence for the specific import and then he had to negotiate the exchange rate at which he would obtain the required foreign currency from the government. In the early 1950s the rules of thumb for issuing licences were fairly rigid. Luxury imports

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[4] Insofar as any conclusions can be made from data based on actual import figures, e.g. the smaller proportion of imports which were restricted by quotas may reflect the efficiency of quotas in reducing imports!

were discouraged and licences were only granted for essentials. Exceptions were made in the case of importers who did not require foreign exchange; this was especially prevalent up to 1952 and was a major loophole for black market transcations (i.e. luxury imports entered Israel but at very high effective exchange rates). Licences were not allowed if a domestic producer (or even a potential domestic producer) existed. During the 1950s the official licence-issuing policy shifted away from blind protection to considerations of profitability. From 1956-62 the degree of protection on value added given to domestic producers by issuing an import licence at a specitifc exchange rate was supposed to equal the effective exchange rate given to exporters of that good plus a markup ranging from 15 % on raw materials to 40 % on finished products. Licences were, however, still issued on a case by case basic and the de facto rules of thumb did not change much (Halevi and Klinov-Malul, p. 238). In sum, the situation between 1950 and 1962 was that many import-substituting producers were given absolute protection because competing imports were not permitted and, where competing imports were allowed, high exchange rates[5] were set (see below).

An overvalued currency provides an incentive to import and a disincentive to export. Just as measures were taken to restrict imports, measures were also taken to encourage exports, but the quantitative significance of the latter was considerably less than the former. The bias against export promotion (vis-à-vis import substitution) is visible in the 1956-62 rule of thumb for setting exchange rates on imports. Calculations of effective exchange rates[6] have shown that the return in Israeli pounds for a dollar of

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[5] Throughout this paper, the exchange rate is measured by the number of Israeli pounds required to buy one U.S. dollar. Thus, a "high" exchange rate implies that more Israeli pounds were needed than was stated in the formal exchange rate.

[6] The effective exchange rate is the total number of pounds required by the importer to purchase a dollar's worth of goods and includes all tariffs, premiums, etc.

value-added in domestic production competing with imports was greater than the number of Israeli pounds received for a dollar's worth of exports (Michaely 1971, pp. 115-6), and this only includes imports that were permitted[7]. Thus government trade policy discriminated against production for markets outside Israel; a situation described by a 1958 commentator:

> "Thus far, production has been oriented towards the local market. Producers regard exports as merely a necessary but not desirable addition to their production for the local market; necessary to gain the favour of the government and to obtain access to imported raw material." (Kreinin, p. 203).

The last point in the quotation refers to the principal incentive given to exporters, the right to import inputs at a favourable rate of exchange. This was not enough to make exporting attractive (it is included in Michaely's calculations of effective exchange rates), but did provide an incentive for acting as an exporter in order to import an excess of supposed inputs which could be resold at profit on the black market (Rubner pp. 187-9) - an example of misallocation resulting from the multiple exchange rate system.

Having established that the import licence system which opened up the possibility of monopoly profits for domestic producers, as well as for licence holders, provided an incentive for import substituting production, we will now try to quantify the extent of the protection offered. Since the quota was usually the effective constraint on competing imports, any calculation of the effective rate of protection based on tariff rates will be too low. Neither can the difference between domestic and world prices be used as an index of the degree of protection, for not all licence holders

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[7] Thus such a measure underestimates the degree of protection given to import-substitute producers, whereas the effective exchange rate on exports is an accurate measure of the incentive given to exporters.

or import substitute producers wanted or were able to reap full monopoly profits[8]. Thus, we will have recourse to two second-best measures, which can provide only a guide to the rate of protection; the first measure is the effective exchange rate actually charged on imports between 1950 and February 1962 and the second is the effective exchange rate after 1962.

The existing effective exchange rate on an import is a minimum measure of protection when quotas exist, because there is no guarantee that all the demand for import at that rate is satisfied; i.e. the effective exchange rate could possibly be raised without reducing imports[9]. The two sources for effective exchange rates during this period are Baruh's estimates for 1955-61 and Michaely's work on 1949-62, which give rates by commodity group disaggregated over 31 and 61 branches respectively[10]. Although not directly comparable because of the differing classification and differences in estimation, they yield similar results. Michaely's estimates for 1950, 1958 and 1961 are given in Table II. Such estimates can easily be converted into the more familiar language of nominal protection rates by dividing the effective rate by the official rate.

The level and the dispersion of the nominal rates in Table II are high compared to other countries[11]. Michaely also found that the degree of scatter fluctuated from year to year but the ranking ot importers' exchange

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8 Two examples: (i) institutions, which were responsible for a large proportion of total imports, were in general not profit-maximizers, (ii) especially in the early 1950s many domestic prices were regulated by the government.

9 An increase in the effective exchange rate in such a case would reduce quota profits, which are not included in calculation of effective exchange rates, but would not affect the actual rate of protection.

10 Michaely also has a more detailed disaggregation in Vol. II of the Hebrew version of his 1971 book.

11 The level is higher than existing or past rates in the industrialized countries (Maizels, p. 141) and appears typical of LDCs; in the IBRD study of protection in seven countries Malaya, the Philippines and Norway tend to have lower nominal rates than Israel, Mexico similar rates and Brazil, Chile and Pakistan higher rates (Balassa). Concerning the dispersion of the nominal rates, see Michaely's estimates of the coefficient of variance of importer's exchange rates and his comments thereon (Michaely 1971, p. 105).

rates remained stable[12], which suggests that the government followed a consistent priority ranking. In aggregate terms the lowest rates were for machinery and equipment, the second highest for raw materials and semi-finished products and the highest rates for finished goods.

A tendency for the nominal tariff rates to increase between 1950 and 1962 is also clear from Table II, which suggests that protection was not only high but was, moreover, increasing. Such a tendency would be in contrast to stated government policy which after 1956 was aimed at reducing the average level of protection. This conclusion must, however, be modified for three reasons. First, in the presence of domestic inflation the official exchange rate became increasingly unrealistic through the period and increases in the non-formal component of the effective exchange rate may be seen as offsetting this in order to maintain the status quo with regard to protection. Michaely found that the effective exchange rate for importers increased by more than domestic prices between 1951 and 1954, but after that the ratio of the two remained fairly stable (Michaely 1971, p. 94). Second, increases in the nominal rate of protection may have reduced quota profits without affecting the supply of imports in the domestic market. Third, changes in average tariff rates for commodity groups may reflect changes in the commodity composition of the groups rather than changes in actual tariffs.

A more satisfactory measure of the degree of protection granted to domestic producers is the effective rate of protection (ERP), i.e. the rate on value added. In addition to the effective exchange rates just discussed Michaely calculated for 1958 the "protective exchange rate", a concept analagous to and easily converted into the standard Corden measure of ERP. These estimates and ERPs are given in Table II. Unfortunately they are just for one year, because this is the only year for which a sufficiently detailed input-output table is available (Bruno 1962), and

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[12] Spearman's rank correlation coefficient was applied to 277 commodities for the period 1955-62 and all coefficients were significant at any reasonable level (Michaely 1971, pp. 110-1).

Table II a

Importers' Effective Exchange Rates 1950, 1958 and 1961 and the Protective Exchange Rate 1958

Commodity Branch	Importers' effective exchange rates			Protective exchange rates
	1950	1958	1961	1958
Cereals and pulses	0.36	2.23	2.43	2.44
Roughage	0.36	3.63	2.01	2.28
Cotton	0.36	2.29	2.44	2.22
Other field crops	0.50	2.19	2.02	2.19
Vegetables and melons	0.39	2.23	3.30	2.20
Cattle	0.36	2.08	2.63	2.01
Poultry	0.41	1.89	3.20	1.85
Other livestock	0.36	2.41	2.78	2.49
Fruit other than citrus	0.43	3.92	6.96	4.31
Other agricultural products	0.38	3.15	3.99	3.42
Gravel and scrap metal	0.41	1.83	2.03	1.85
Nonmetallic minerals	0.36	1.82	1.91	1.78
Meat and fish products	0.39	2.33	3.50	2.21
Dairy products	0.39	1.49	3.30	1.40
Vegetables and fruit preserves, spices and coffee	0.43	4.25	5.87	4.95
Flour mill and bakery products	0.36	2.94	4.47	5.57
Sugar and confectionery	0.43	5.55	6.75	5.04
Beverages and ice	0.88	6.29	6.33	2.23
Tobacco products	2.88	6.59	9.71	23.19
Cotton spinning	0.41	2.15	2.25	2.14
Wool spinning	0.36	1.82	1.80	1.73
Fabrics, weaving and finishing	0.45	2.50	2.13	2.62
Knitting, twine and textiles n.e.s.	0.47	1.88	2.01	1.76
Clothing	0.48	2.40	2.55	2.44
Basic wood products	0.40	2.61	3.05	1.55
Carpentry and joinery	0.48	2.67	2.36	2.65
Paper and paper products	0.43	2.34	2.39	2.30
Printing and publishing	0.36	1.70	1.81	1.66
Leather and leather products	0.48	2.57	2.76	2.58
Rubber products	0.47	2.25	2.36	2.15
Manufacture and repair of tyres	0.50	2.36	2.59	2.10
Plastic products	0.48	2.83	3.35	3.23
Basic chemicals	0.38	2.51	2.37	2.82
Oil, soap and detergents	0.40	2.08	2.06	2.04
Paints	0.38	2.01	2.40	1.83
Pharmaceutics, insecticides and other chemicals	0.42	2.06	2.14	1.63
Glass and ceramics	0.47	2.37	2.25	2.59
Cement	0.44	2.70	6.08	37.16
Cement and lime products	0.47	1.85	2.45	1.81
Asbestos and nonmetallic mineral products n.e.s.	0.41	2.22	2.45	2.32
Diamonds	0.36	1.82	1.96	1.86
Basic iron and steel	0.41	2.08	2.29	2.12
Basic non-ferrous metals	0.36	1.83	1.94	1.81
Metal pipes	0.43	1.93	1.96	2.01
Plumbing fixtures	0.48	1.83	2.05	1.78
Structural metal products	0.36	1.80	1.80	1.79
Tin products	0.42	1.97	1.96	1.90
Wire products	0.41	2.33	2.19	2.46
Kitchen utensils, tools and galvanizing	0.42	3.33	2.28	4.80
Other metal products	0.47	2.15	2.36	2.21
Industrial and agricultural machinery	0.37	1.82	2.10	1.96
Household equipment	0.43	2.63	2.57	3.28
Electric motors and transformers	0.40	1.81	2.20	1.96
Electric fixtures, batteries and accumulators	0.48	2.42	3.04	2.56
Domestic electric appliances, radio equipment	0.51	2.92	3.02	2.49
Manufacture of motor vehicles	0.44	2.42	2.33	2.52
Repair of motor vehicles	0.47	1.88	1.95	1.75
Manufacture and repair of ships and aircraft	0.36	1.80	1.80	1.78
Precision instruments and manufactures n.e.s.	0.46	2.14	2.40	4.92
Miscellaneous, repairs, etc.	0.39	2.25	1.98	2.50
Fuel, extraction and refining	0.37	3.35	3.81	3.05
Aggregate	0.40	2.15	2.60	2.63

Source: Effective exchange rates are from Michaely (1971), pp. 85 and 120-1, protective rates are from Michaely (1971), pp. 115 and 126-7.

Table II b

Nominal Rates of Protection by Commodity Branch 1950, 1958 and 1961
and Effective Rates of Protection 1958

Commodity Branch	Nominal rates of protection			Effective rates of protection
	1950	1958	1961	1958
Cereals and pulses	0 %	24 %	35 %	36 %
Roughage	0 %	102 %	12 %	27 %
Cotton	0 %	27 %	36 %	23 %
Other field crops	40 %	22 %	12 %	22 %
Vegetables and melons	9 %	24 %	83 %	22 %
Cattle	0 %	16 %	46 %	12 %
Poultry	15 %	5 %	78 %	3 %
Other livestock	0 %	34 %	54 %	38 %
Fruit other than citrus	20 %	118 %	287 %	139 %
Other agricultural products	6 %	75 %	122 %	90 %
Gravel and scrap metal	15 %	2 %	13 %	3 %
Nonmetallic minerals	0 %	1 %	6 %	-1 %
Meat and fish products	9 %	29 %	94 %	23 %
Dairy products	9 %	-17 %	83 %	-22 %
Vegetables and fruit preserves, spices and coffee	20 %	136 %	226 %	175 %
Flour mill and bakery products	0 %	63 %	148 %	209 %
Sugar and confectionery	20 %	208 %	275 %	180 %
Beverages and ice	146 %	249 %	252 %	24 %
Tobacco products	707 %	266 %	439 %	1188 %
Cotton spinning	15 %	19 %	25 %	19 %
Wool spinning	0 %	1 %	0 %	-4 %
Fabrics, weaving and finishing	26 %	39 %	18 %	46 %
Knitting, twine and textiles n.e.s	32 %	4 %	12 %	-2 %
Clothing	34 %	33 %	42 %	36 %
Basic wood products	12 %	45 %	69 %	-14 %
Carpentry and joinery	34 %	48 %	31 %	47 %
Paper and paper products	20 %	30 %	33 %	28 %
Printing and publishing	0 %	94 %	1 %	-8 %
Leather and leather products	34 %	43 %	53 %	43 %
Rubber products	32 %	25 %	31 %	19 %
Manufacture and repair of tyres	40 %	31 %	44 %	17 %
Plastic products	34 %	57 %	86 %	79 %
Basic chemicals	6 %	39 %	32 %	57 %
Oil, soap and detergents	12 %	16 %	14 %	13 %
Paints	6 %	12 %	33 %	2 %
Pharmaceutics, insecticides and other chemicals	18 %	14 %	19 %	-9 %
Glass and ceramics	32 %	32 %	25 %	44 %
Cement	23 %	50 %	238 %	1964 %
Cement and lime products	32 %	28 %	36 %	1 %
Asbestos and nonmetallic mineral products n.e.s	15 %	23 %	36 %	29 %
Diamonds	0 %	1 %	9 %	3 %
Basic iron and steel	15 %	16 %	27 %	18 %
Basic non-ferrous metals	0 %	2 %	8 %	1 %
Metal pipes	20 %	7 %	9 %	12 %
Plumbing fixtures	34 %	2 %	14 %	-1 %
Structural metal products	0 %	0 %	0.%	-1 %
Tin products	18 %	9 %	9 %	6 %
Wire products	15 %	29 %	22 %	37 %
Kitchen utensils, tools and galvanizing	18 %	85 %	27 %	167 %
Other metal products	32 %	19 %	31 %	23 %
Industrial and agricultural machinery	4 %	1 %	17 %	9 %
Household equipment	20 %	46 %	43 %	82 %
Electric motors and transformers	12 %	1 %	22 %	9 %
Electric fixtures, batteries and accumulators	34 %	34 %	69 %	42 %
Domestic electric appliances, radio equipment	43 %	62 %	68 %	38 %
Manufacture of motor vehicles	23 %	34 %	29 %	40 %
Repair of motor vehicles	32 %	4 %	83 %	-3 %
Manufacture and repair of ships and aircraft	0 %	0 %	0 %	-1 %
Precision instruments and manufactures n.e.s.	29 %	19 %	33 %	173 %
Miscellaneous, repairs, etc	9 %	25 %	10 %	39 %
Fuel, extraction and refining	4 %	86 %	112 %	69 %
Aggregate	11 %	30 %	44 %	46 %

Source: Nominal rates of protection were calculated by dividing the effective exchange rates in Table II a by the formal exchange rate and subtracting one. Effective rates of protection were derived in similar manner from the protective exchange rates of Table II a.

analysis of the time trend of these rates is not possible. As with the nominal rates, a wide dispersion of ERPs is apparent. Some rates are even negative, reflecting the government's desire to encourage imports of specific "desirable" consumer goods with an excess domestic demand, e.g. dairy products and foreign journals. Other cases where the ERP is below the nominal rate may reflect goods which are in excess demand as inputs to domestic industries[13]. The highest ERPs were on cement (1964 %), several nonessential (in excess of existing domestic production) foods, etc., precision instruments, tools, household utensils, plastic products and general machinery. It must be reemphasised that these estimates understate the true protection rate in the presence of quotas, (cf. p. 10). A further source of downward bias is the level of aggregation, since the nominal tariff on an input is likely to be less than the average nominal tariff of the commodity group to which the input belongs (assuming that the input is a raw material and raw materials have the lowest tariff rates). At the individual commodity level several cases of large ERPs have been found in Israel (Rubner, p. 169), e.g. canned sardines (844 %) and illegal importation of crepe rubber at 789 % ERP (suggesting that the actual protection was still higher).

An alternative approach to measuring the degree of protection enjoyed by domestic producers is to look at nominal and effective tariff rates after the inauguration of the import liberalisation policy in 1962. Under this policy quotas were to be replaced by tariffs, but in the short-rund the tariffs were to provide the same degree of protection as producers had enjoyed before 1962. If this had been perfectly implemented then the 1962 effective tariff rates would be an ideal proxy for the level of protection in 1961. It was not, however, perfectly implemented in that the changeover was slow and some administrative restrictions on imports were retained.

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[13] Bearing in mind the ad hoc nature of licence allocation it is always possible that an apparent anomaly may reflect administrative inconsistency rather than any deeper plan.

These reservations should be borne in mind when examining the estimates of nominal and effective tariffs in 1967[14] prepared by Tov (Table III). The 1967 estimates support the view that tariffs in Israel have been high. As with Michaely's data the dispersion is high too and the maximum nominal tariff was over 100 % in 15 of Tov's 16 commodity groups, while the ERP reached 4,000 % in clothing and over 1,000 % in three other groups (textiles, electrical equipment and miscellaneous).

In this section we have indicated how the Israeli government implemented its policy of encouraging the domestic production of import substitutes. Such production was afforded considerable protection by the import licence system. At times this could mean absolute protection, when no licences were issued for the import of a particular commodity, and in general when imports were permitted it was at a high ERP if there existed competing domestic producers. This explains why import substituting industries should be the expanding sectors during this period, but does not explain which specific industries would expand fastest. Since prices no longer provided a satisfactory allocative mechanism, the decision to expand an industry was primarily taken by the government and implemented by its allocation of investment funds. The efficiency of this system, along with the question of whether any non-import substituting sectors could have been expanded more profitably, is analyzed in section IV. Before looking at this potential cost of the import substitution policy we will first try to measure its benefits, i.e., how far this policy contributed to Israel's economic growth between 1950 and 1962.

III

The concept of "import substitution" is, like "economic development", one which all economists know the general meaning of. This has its advantages,

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[14] Although these apply to the end of 1967 - almost six years after the liberalization policy had been announced - only 45-60 % of industrial output by value had been covered by the programme (Tov, p. 31).

Table III

Nominal and Effective Tariffs by Branch, 1967

	Nominal Tariff (%)		Effective Tariff (%)	
	Average	Maximum	Average	Maximum
Meat, fish, edible oil and milk products	72.8	540	103.8	982
Other foods	105.7	290	140.4	634
Textiles	91.7	900 +	240.6	1,664
Clothing	110.2	900 +	396.7	4,000
Wood and wood products	63.9	138	76.5	499
Paper and paper products	55.6	190	74.2	353
Leather and footwear	57.7	100	78.0	198
Rubber and plastics	88.7	175	118.5	304
Chemicals	72.9	330	132.8	710
Non-metallic mineral products	63.3	345	79.8	283
Basic metals	39.1	100	84.8	300
Metal products	57.0	220	104.3	400
Machinery	55.8	83	97.0	178
Electrical equipment	133.2	550	253.9	1,150
Transport equipment	115.0	177	179.5	828
Miscellaneous	90.3	400	143.2	1,025

Source: Tov, pp. 33, 38.

e.g., a paper may be entitled "Import Substitution in Israel 1950-62" and its content is apparent to all, but it has its costs too. Upon trying to produce an operationally useful definition of the term in order to quantity the degree of import substitution in a specific instance, the concept proves to be elusive. Yet the applied economist is prevented from making an arbitrary definition, letting the words mean precisely what he says they mean à la Humpty Dumpty, because he will then be accused of perverting the theoretical concept, calling something "import substitution" which is not commonly understood by the term and in general providing confusion rather than enlightenment. Bearing these cautionary words in mind we will look at the problems involved in quantifying import substitution and some measures which have been proposed.

Import substitution refers to the replacement of imports by domestic sources of supply. Thus import substitution would have taken place if the amount of imports of a good fell while total availability of the good remained constant. The practical problem is that the ceteris paribus assumption is rarely valid. A critical case is when imports increase but by less than total supply. In this case the usual practice has been not to compare the absolute magnitude of imports at the beginning and the end of the period, but to compare the final year's imports with what imports in that year would have been had import substitution not taken place. The problem is, of course, how to define the latter magnitude in a non-circular manner. The practical solution to this problem has been to assume that the normal course of events is for imports to increase at the same pace as total supply and any reduction of the ratio of imports to total supply is called import substitution. This definition can be written as:

$$M_1 - \left(\frac{M_o}{Z_o}\right) Z_1 < 0 \qquad (1)$$

where M = imports, Z = total supply and the subscripts o and 1 refer to the initial and final time period respectively. The absolute value of the left hand side of expression (1) is, under this definition, a measure of the amount of

import substitution which has taken place between period o and period 1. The "contribution" of import substituting production to growth of domestic production can then be obtained by dividing the lefthand side of (1) by the change in output ($X_1 - X_o$). This approach to quantifying import substitution is primarily associated with Chenery, and has underlaid almost all empirical work on import substitution in the last fifteen years. There have been minor variations, but the basic definition of import substitution has been the difference between what imports actually were and what they would have been had they remained a constant proportion of total supply.

The major conceptual problem with the Chenery measure is that it can produce ridiculous results, i.e., ones which conflict with the general understanding of what import substitution is. The essence of the problem lies in the fact that import substitution is a process and as such has a time dimension, whereas the Chenery measure has no rules concerning the selection of beginning and end periods. An example of a "ridiculous result" can be found in the history of one of the developed countries. In 1850 Canada had a small demand for farm machinery, all of which was imported; in 1860 demand had increased and all the implements were domestically produced; and in the 1860s there was a large increase in demand all of which was met by domestic producers. The contribution of import substitution to the industry's growth was 100 % in the 1850s, 0 % in the 1860s and 100 % between 1850 and 1870. This last result is clearly contrary to all our understanding of what import substitution is, for most of the increased production occurred after imports had fallen to zero. If a period 1850 to 1970 were used we could even ascribe all Massey-Fergusson's sales to import substitution! This is an extreme case, but the pitfalls of applying the Chenery measure to a long period are clear, since this procedure will overstate what would normally be considered import substitution and permits no distinction within the long period between subperiods when import substitution did or did not occur. The opposite extreme of taking very short periods can, however, be just as undesirable, for then one meets the problem of the day to day or seasonal or cyclical fluctuations in trade. The critical assumption behind expression

(1) is that all changes in the marginal propensity to import can be called import substitution, but around such "structural" changes there are short and medium-term cyclical fluctuations and the two cannot in principle be separated. Chenery has claimed that any period of 5-7 years is too short to prevent such distortion (Chenery and Taylor, p. 415), but this may be too long to prevent the overestimation discussed above. A further point regarding the importance of the choice of time periods is that if import substitution is calculated over x years this will in general yield a different result than if it is calculated for the consecutive subperiods of $\frac{x}{y}$ years each and then summed. If imports are increasing steadily but falling relative to total supply, the former measure will be higher than the latter. Thus the choice of number of periods (as well as the specific terminal dates) affects the value attributed to import substitution. The contrast between the importance of the choice of time horizon and the indeterminacy of the optimal time horizon poses an insoluble dilemma for the Chenery measure. Yet it remains the basis of empirical work on import substitution haute de meilleur (a situation to some extent analogous to the use of per capita GNP as a measure of economic development). The results are calculated and quoted so long as they are "reasonable", i.e., the Canadian example quoted above would be recognized as "ridiculous" - but the boundary between "reasonable" and "ridiculous" is hazy.

An attempt so measure the extent of import substitution in the Israeli manufacturing sector has been made by Pack. He calculated the ratios M_i/Z_i for ten non-food branches for 1950 and 1958 and the absolute import substitution (as given by expression (1)) over the period 1950-8 (see Table IV). The latter results are rather sloppily presented in that the unit of measurement is not given and no figures on gross output or total supplies are given for comparison. Thus, although Pack describes 1950-8 as "a period of significant import substitution" (Pack p. 271), it is unclear what the criterion of "significant" is.

The usual contribution to growth measures, i.e., absolute import substitution divided by the increase in production in that branch, are also given in Table IV. These indicate that import substitution was the source of over 50 % of output growth in chemicals, between 10 and 50 % in leather goods, machinery, metals and metal products, and non-metallic minerals (stone and cement) and less than 10 % in the remaining five branches. The choice of which of these percentages are significant is rather arbitrary. In comparison with studies on other countries, however, the general impression is one of import substitution making a below average contribution to industrial growth in Israel. In Chenery's original cross-sectional study, for example, the effect of import substitution was greater in every sector except chemicals (where his result of 50 % was marginally smaller than the Israel figure), and in the case of the investment goods sectors considerably greater. Part of the explanation for this discrepancy may lie in scale factors, which prevented efficient production of some investment goods in a country of Israel's size.

Pack's analysis is restricted to the period 1950-8, because this was the period of "significant import substitution". For completeness, however, we should also include the remaining years up to the February 1962 devaluation. The conventional wisdom among Israeli economists is in agreement with Pack in saying that import substitution was not an important source of growth 1959-61. On an aggregate level, the ratio of total imports to total supply in the economy actually rose (Michaely 1973, ch. 6. Table 8), i.e., there was negative import substitution. A similar result is reported by Bruno, who also found negative import substitution for specific commodities (Bruno 1962, ch. 5. esp. pp. 132-5).

It would be desirable for comparative purposes to quantity these conclusions for 1958-61 under a similar commodity classification to that of Table IV. This is, however, made difficult by the varying classifications used by the competent Israeli authorities[15], and would require considerable

[15] The major official change was the switch in October 1958 from the Israel Custom's Tariff classification of imports, which had been in use since the founding of the state, to the S.I.T.C. grouping. There are, however, also differences in the level of aggregation of industrial output data in successive Statistical Abstracts of Israel.

Table IV

Measures of Import Substitution in Israel 1950-8

Sector	$\left(\frac{M_i}{Z_i}\right)_{50}$	$\left(\frac{M_i}{Z_i}\right)_{58}$	I.S.	$\frac{I.S.}{\Delta X}$
Chemicals	62.1	25.0	69,630	52.2 %
Metals & metal products	45.2	31.1	36,752	22.6 %
Leather	33.5	0.8	26,890	33.8 %
Machinery	71.4	57.8	17,302	37.7 %
Textiles	19.9	13.0	13,302	9.4 %
Non-metallic minerals	15.9	2.6	9,197	16.4 %
Woodworking	10.6	5.8	7,658	5.7 %
Paper and Printing	20.1	15.2	6,475	6.1 %
Electrical appliances	45.9	43.4	2,412	4.8 %
Clothing	2.3	1.8	1,718	0.5 %

Notes: cols. (1), (2) = ratio of imports to total supplies;
col. (3) = Chenery measure of import substitution = expression (1) in text;
col. (4) = contribution of I.S. to growth of total output.

Sources: cols. (1) - (3) from Pack, p. 272; col. (4) calculated using data from Lubell, p. 45, and Bruno, 1962 (the same sources as used by Pack).

groundwork in reclassifying the trade and production data. Some preliminary conclusions regarding the ratio of imports to domestic production in similar commodity groups to Table IV can, however, be made for 1958-60 from available data[16]. Caution must be used in interpreting the following figures because it is not always clear that the classifications are perfectly consistent (this problem was especially severe for the categories of basic metal products and machinery). The most striking feature of these preliminary calculations were the large increases in $^{M}/_{X}$ in chemicals (from 25.6 % to 70.1 %), textiles and clothing (from 6.1 % to 17.5 %), paper and printing (11.7 % to 33.7 %) and electrical appliances (from 33.3 % to 75.2 %). These figures not only point to negative import substitutions between 1958 and 1960, but are so drastic as to suggest minimal import substitution in the whole period 1950-60[17]. Similar phenomena occurred in wood and carpentry, metals and metal products and machinery, although the data for these groups appear less comparable with that of Table IV. In the leather and non-metallic minerals groups the $^{M}/X$ ratio remained stable 1958-60, suggesting that the gains from import substitution between 1950 and 1958 were retained.

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[16] The data sources used are Statistical Abstract of Israel 1962, pp. 336-7, Statistical Abstract of Israel 1964, p. 153, and Bruno (1962), pp. 36-7.

[17] The Chenery method of calculating the extent of import substitution has been criticized by Morley and Smith for omitting the intermediate demands generated by import substitution and thus understating its full extent. Since the Morley-Smith formula rests on the same critical assumption regarding changes in the marginal propensity to import as Chenery's measure, the criticisms regarding the arbitrariness and importance of the time horizon still apply. It will be recalled that these criticisms suggest that all measures à la Chenery (including Morley-Smith) will tend to overstate the degree of import substitution. Nevertheless, once the rationale of assuming that all deviations from a constant propensity to import are to be put down to import substitution is accepted, then the Morley-Smith modification is logically superior to the Chenery method. Use of the logically inferior method in the hope that the two biases would be mutually offsetting is clearly a dubious scientific approach. Thus, one of our future tasks will be to calculate Morley-Smith measures of import substitution for the period under consideration. Although an input-output table exists for 1958 (Bruno 1962), such a task is complicated by data problems similar to those mentioned in footnote 12.

The results of the previous paragraph illustrate the importance of the choice of terminal years in measuring import substitution. Before drawing conclusions for the 1958-60 period, a final set of calculations will be presented which may help our understanding of the cause of import substituting industrialization in the 1950s. The period 1950-8 was subdivided into four year periods, 1950-4 and 1954-8, and the results in Table IV were reestimated for each subperiod (Table V). The results in Table V indicate some variation in the timing of import substitution. Textiles and clothing, nonmetallic minerals and electrical appliances all show more import substitution taking place between 1950 and 1954 than in the 1954-8 period. In the remaining sectors, which include Pack's four biggest import-substituting sectors, 1954-8 was the period of greatest import substitution. In sum, the bulk of the 1950-8 import substitution occurred in the last four years of the period.

The time path of import substitution in Israel's manufacturing sector which emerges from the above data is one of slow progress up to 1954, followed by substantial import substitution between 1954 and 1958 and then a major reversal of this trend in 1959 and 1960. In Section I it was predicted that import substitution would be high in Israel's early years, just because the country started life with a high import/GNP ratio. The fact that this is not revealed by the 1950-4 results reflects the tremendous increase in aggregate demand in the early 1950s, which was primarily associated with the mass immigration of 1948-51. Thus, although domestic production was increasing rapidly, it could not keep up with demand and import ratios remained high. These ratios only started to fall significantly in the mid 1950s. The decline in import ratios in the 1954-8 period was sufficient to make import-substitution appear as a significant source of industrial growth in Israel 1950-8, although its contribution was less than that found in other developing countries. A major question mark over the succes of the policy of industrialization by import substitution is, however, raised by the 1958-60 results which show the gains of 1950-8 being lost in most sectors. This result may be dismissed because of the imperfect data, but

Table V

Import Substitution in Israel 1950-4 and 1954-8

Sector	$\left(\frac{M_i}{Z_i}\right)_{50}$	$\left(\frac{M_i}{Z_i}\right)_{54}$	$\left(\frac{M_i}{Z_i}\right)_{58}$	$I.S._{50-54}$	$\left(\frac{IS}{\Delta X}\right)_{50-54}$	$I.S._{54-58}$	$\left(\frac{IS}{\Delta X}\right)_{54-58}$
Chemicals	62.4	67.4	25.0	-5.2	< 0	79.3	78.4 %
Metals & metal products	45.3	40.9	31.1	7.5	8.5 %	25.5	34.1 %
Leather	29.6	23.7	0.8	1.3	8.7 %	18.8	29.1 %
Machinery	71.5	84.6	57.8	-13.4	< 0	34.1	138.6 %
Textiles	19.9	14.0	13.0	8.7	8.2 %	1.9	5.2 %
Non-metallic minerals	16.2	3.3	2.6	7.3	15.0 %	0.5	6.9 %
Woodworking	10.2	20.2	5.8	-4.5	< 0	23.0	20.7 %
Paper & printing	20.3	19.1	15.2	0.6	1.7 %	5.2	7.3 %
Electrical appliances	45.8	24.5	43.4	13.5	29.6 %	-18.2	< 0
Clothing	2.5	1.9	1.8	0.6	0.9 %	0.3	0.1 %

Sources: Lubell, p. 45; Bruno (1962).

the uniformity of the conclusions seems too strong to permit such an easy way out. Explanation of the 1958-60 phenomenon more likely rests in the easing of the quantitative restrictions as the climate of opinion, which eventually led to the import liberalization policy of the 1960s, started to be felt (Michaely, 1973). Thus the 1954-8 import substitution is revealed as an essentially forced process, i.e. caused by the physical prevention of imports which reduced the $^{M}/_{Z}$ ratio, and not as part of any long-term source of growth.

A word of caution concerning the conclusions drawn in the previous paragraph is appropriate. We have already discussed at some length the importance of the choice of terminal years when making Chenery-type calculations, and the differences between 1950-4 and 1954-8 may be explained by the position of the end years in the business cycle. The early 1950s were a boom period in Israel, but by 1953-4 the effects of this were slackening off and the ratio of domestic production to imports may have been below its trend value in 1954. Conversely, 1958 was part of a boom period when domestic production was expanding and the ratio of domestic production to imports was above its trend value. Thus the apparent increase in import substitution in 1954-8, compared to 1950-4 is in part illusory, i.e. not reflecting any structural change. A second source of bias in our calculations is the use of the official exchange rate in valuing imports. As the official exchange rate diverged further and further from the effective exchange rate in the second half of the 1950s, the official import data became more and more underestimates of the actual value of imports. Thus a reduction in the ratio of imports to domestic production reflects, at least in part, the change in the relative official prices rather than a change in real values. If this is true of the 1954-8 period then it is a fortiori true of 1958-60 and our conclusions regarding the lack of importance of import substitution in the latter period are reinforced. Thus, given the technical attributes and limitations of the method used to estimate the extent of import substitution, the conclusions in the previous paragraph must be treated with caution, since it is unclear to what extent they are explaining real phenomena.

The Chenery method of estimating import substitution is far from perfect, and its results must be interpreted with caution. Nevertheless, changes in the rate of import substitution over subperiods of the 1950s do appear to have occurred. After a slow start import substitution gathered pace behind a wall of quantitative restrictions, but few of these gains could be retained once absolute protection diminished (even though effective protection remained high, cf. section II). Over the whole decade in only one manufacturing sector, leather goods, was import substitution a major source of growth (about one third of the increase in production). In three sectors (machinery,non-metallic minerals and metals and metal products) it may have been a source of as much as 20 % of the growth in production, but in all other sectors its contribution to growth was negligible (less than 10 %). These conclusions are in direct contrast to Pack' s characterization of 1950-8 as a period of significant import substitution and, indeed, to the whole conventional wisdom[18] of the 1950s being the decade of import substitution until the opportunities for substitution began to disappear around 1958. Our results suggest that these opportunities were never very great and the apparent import substitution between 1950 and 1958 was on the whole a temporary phenomenon concentrated in the years 1954-8. Thus, despite the strong bias of government policy in the direction of supporting import substitution, its benefits for Israel do not appear to have been very significant.

IV

The major economic cost of a policy of import substitution is that the interference with the price mechanism can lead to misallocation of resources. Such misallocation can occur in the choice of products, markets and factor intensity. By granting incentives to specific import-substitute producing industries the government may be encouraging sectors which do

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[18] A recent restatement has been made by Bruno:
"Import substitution was a factor of considerable importance in the industrial (and earlier agricultural) growth of the 1950s, when the food, textile, fertilizers and paper industries were the main ones developed" (Bruno 1972, p. 97).

in fact have the greatest social profitability. Similarly, by turning producers' attention to the domestic market, the government may be diverting goods from more profitable external markets. After determining which sectors were in fact encouraged by government policy, these two questions will be analyzed together using the tool of domestic resource cost. The third source of misallocation arises from the fact that most capital goods were imported in Israel and, although effective exchange rates on capital goods were lower than those on consumer goods, imports of capital goods required licenses and could be subject to quantitative restriction. The consequences of these restrictions will be analyzed below. A final economic cost of the regulatory mechanisms which accompanied the government's import substitution policy was the waste of resources associated with attempts to avoid compliance with the regulations. Some of these have been alluded to above and further (at times staggering) examples are given by Rubner, but since such costs are in the aggregate unquantifiable they will not be dealt with here.

Government policy in Israel 1950-62 was to encourage import substitution by offering protection to domestic industry (Section II). Upon comparing the effective exchange rates by sector in Table III with the measures of import substitution in Table IV, however, somewhat anomalous results are obtained. There is no systematic relationship between the level of the ERP and the measure of import substitution in individual industries. If anything, the relationship is in the wrong direction, for the two sectors with the lowest degree of import substitution had the highest ERPs (clothing and electrical appliances). In the previous section doubt was cast upon the relevance of the ranking in Table IV, but, even allowing for error, an anomaly remains in that the only sector for which there was consistently strong evidence of import substitution (leather) has one of the lowest ERPs in Table III.

The calculated ERPs provide little guide as to which sectors were in fact encouraged by government policy, because they are only minimum measures of effective protection. The ERPs understate total protection by the amount of potential quota profits, which varied from sector to sector.

Thus, a ranking of sectors by ERP would not necessarily approximate a ranking by total protection. As was indicated above, protection tended to be absolute for existing or intending domestic producers, and it appears that tariff and quota policy was fairly neutral between import-substitute producing sectors. The question of which sectors were encouraged by the government's import-substitution policy thus becomes a matter of examining how potential domestic producers came into existence.

The major source of growth in Israel in the 1950s was capital accumulation (Gaathon). The stock of capital in industry rose by 432 % between January 1950 and January 1962, and the capital/output ratio more than doubled. In the same period net domestic savings were practically zero, i.e. the investment was financed by capital inflows. A significant proportion of the capital inflow was channelled to public and private producers via government agencies. The procedure was for the enterprise to obtain approved status, in order to be eligible for Development Budget loans. Public financing accounted for some 40 % of total investment in industry in the 1950s. Since the share of financing approved enterprises was approximately 50 : 50 and many such enterprises could not have been started without government participation, the allocation of development loans determined the location of about three quarters of all industrial investment[19].

The sectoral allocation of government development loans up to 1958 is given in Table VI. Some 70 % of the loeans went to four sectors: textiles, metal-working, chemicals and food. The accompanying text in the source of Table VI, written by a senior official in the Ministry of Commerce and Industry responsible for approving enterprises, makes it clear that the choice of receiving sectors was a matter of deliberate policy, e.g., he talks of "industries whose development the Government is especially interested in promoting, namely, textiles, metal-working, and chemicals"

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[19] The source for this paragraph is the Economic Planning Authority in the Prime Minister's Office: Israel Economic Development, Past Progrss and Plan for Future (Jerusalem 1968) pp. 404-6.

(Salamon, p. 61). These were clearly the sectors expected to make the greatest strides in import substitution, and were thus the beneficiaries of the government's discriminatory investment allocation policy.

The government's loans policy provides an explanation of why metals and textiles were first and second among the sectors in Table IV and chemicals fourth in terms of the increase in domestic output 1950-8. This rapid domestic expansion was partly responsible for the high import substitution measures which were found for these sectors up to 1958. It was shown, however, that over a longer period these measures proved illusory and the success of government policy to encourage import substitution was doubtful. Nevertheless, this policy did presumably have some effect insofar as it fostered greater expansion of the metals, textiles and chemicals sectors than would have been warranted under free product and factor prices. Thus, the question arises of how far this distortion of the price mechanism led to a suboptional sectoral structure of the economy.

In view of the persistent and large import surplus which existed throughout the period 1950-62 (and still exists today), the binding constraint on economic growth in Israel has usually been identified as the foreign exchange constraint (e.g. Bruno 1970, Chenery and Bruno). In such a situation the relevant criterion for determining the social profitability of a project or industry is the domestic resource cost (DRC), i.e., the real opportunity cost in terms of total domestic resources of producing (or saving) a net marginal unit of foreign exchange. Estimates of DRCs for the ten sectors of Table IV plus the two leading export sectors are given for 1958-60 in Table VII. These estimates reveal differences in DRCs between sectors and the extent to which DRCs diverge from the formal exchange rate of 1.80. Also included in Table VII are Bruno's estimates of the total rate of return to capital in these sectors in 1958; this more common profitability measure is given for comparative purposes.

Table VI

Approved Industrial Enterprises in Operation at Dec. 31st., 1957

Branch	No. of enterprises	Approved capital		Govt. loans (IL. mil.)
		(IL.mil.)	($ mil.)	
Spinning, weaving, knitting	64	12.6	8.8	14.5
Metalworking	61	12.4	8.8	5.1
Chemicals, pharmaceuticals, paints	52	11.7	6.9	23.5
Electrical equipment and appliances	47	2.9	4.2	1.2
Food, beverages, fodder	41	8.4	4.8	7.3
Flour mills	8	0.8	0.6	0.3
Cold storage, ice	33	4.6	3.0	2.6
Machinery, motor cars, spare parts	25	1.9	3.0	1.8
Building materials	23	5.6	8.9	2.4
Ceramics, glass	20	1.1	1.5	2.6
Paper, cardboard, printing	20	4.6	4.7	1.2
Rubber	18	2.6	3.8	1.3
Plastics	14	0.6	3.0	0.7
Fine mechanics	14	0.6	1.1	0.2
Wood, wood products	12	1.2	2.0	2.0
Wearing apparel, leather	10	0.1	1.2	0.3
Quarries, stone, marble	5	0.1	1.0	0.1
Miscellaneous	31	5.3	4.5	0.5
Total	498	77.2	71.7	67.7

Source: Israel Economic Bulletin, X, 2-4, Dec. 1958, p. 61.

The most striking feature of Table VII is the high DRCs of the sectors specifically encouraged by the government, i.e. chemicals, metals and textiles. On the DRC criterion electrical appliances, paper and printing and machinery offered better chances of easing the foreign exchange constraint, but these were ignored. The reason why the leather industry expanded rapidly and provided the only substantial source of import substitution is revealed by the high rate of return on capital in that sector. The conclusion from Table VII is that the government's choice of import-substituting induestries was the worst possible and that the system of resource allocation encouraged by the government was detrimental to the government's own goal, insofar as manufacturing industry was concentrated in the areas where Israel's comparative advantage was least[20]. Comparison with the DRCs of the two major export industries, diamonds and citrus, also suggests that the import-substituting-industrialization policy may have been a suboptimal means of easing the foreign exchange constraint, for foreign currency could have been. earned more cheaply in terms of domestic resources by expanding diamond and citrus production.

The DRC method does have some drawbacks which require modification of the above conclusion. DRC is a marginal measure at current prices. Thus, the high values for textiles, chemicals and metals may reflect that after the expansion of the 1950s these industries had just reached a rising section of their cost curves, i.e., the DRCs were much lower in earlier years. Given the nature of these three industries, however, it seems unlikely that they would possess such production functions. For most manufacturing industries in a country of Israel's size we would expect unit costs to be falling over the relevant range. Since such industries were also price-takers in the world market and industrial prices do not fluctuate widely DRC should be a fairly consistent measure over time, at least in the medium-term. This is not the case with citrus and diamonds, where

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[20] This was recognized at the time by engineers and technicians in specific situations, but they had little influence on government policy. A major example (as in many LDCs) was the construction of the steel town near Acre (Rubner, p. 233).

Table VII

Domestic Resource Cost (1958-60) and Total Rate of Return to Capital (1958) by Sector

	Total Rate of Return to Capital, 1958	Domestic Resource Cost (in I £ per $ earned)		
		1958	1959	1960
Leather	48 %	(2.40)		
Clothing	24 %	4.56	4.42	3.73
Woodworking	20 %	(2.50)		
Electrical appliances	15 %	1.85	1.81	1.62
Machinery	15 %	2.46	2.41	2.15
Paper and printing	11 %	2.06	2.04	1.98
Textiles	8 %	4.06	6.12	6.82
Non-metallic minerals	7 %	3.21	3.52	3.22
Metals	3 - 6 %	(2.40)		
Chemicals	2 %	9.94	32.78	-
Diamonds	39 %	1.73	1.71	1.78
Citrus	12 %	1.43	1.82	1.99

Source: Bruno, 1962, p. 101-2, 111, 146; figures in brackets, Pack, p. 372.

Israel produces a significant share of the world output and where prices do fluctuate; e.g., the rising DRC in citrus 1958-60 primarily reflects falling world prices. Thus the decision to encourage import-substitutes rather than citrus and diamond exports cannot be condemned solely on the basis of the DRC estimates. It is also necessary to know the shape of the demand curves for the latter goods[21].

A final restriction to our conclusion that the government encouraged the wrong industries is that it is conceivable that the foreign exchange constraint was not completely binding, since capital imports were sufficient to cover the trade deficit throughout the 1950-62 period[22]. In this case DRC is perhaps the wrong angle from which to approach project evaluation[23]. The rates of return on capital in Table VI do, however, reinforce the conclusion obtained from the DRCs. More problematical is the possibility that non-economic factors dominated the government's objective function and allocative criterion based on profitability are irrelevant to an assessment of government policy. There is, however, no reason to believe that an economically more logical set of allocative priorities would have drastically damaged other objectives (e.g., regional, cultural, etc., development).

Since capital goods were primarily imported and all imports required licences, there was also misallocation in the factor market, especially in the short-run. The timing of imports was affected by the process of licence

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21 There may also have been problems of inelastic supply of diamonds and citrus products.

22 Although this is conceivable, it is highly unlikely that the government at the time considered reduction of the import surplus to be less than crucial. Certainly, academic economists considered it to be one of the goals of the economy (and rightly so) in the 1950s (e.g., Patinkin, pp. 126-7).

23 Theoretically, DRC is just one of several equivalent statements of the social marginal productivity (SMP) investment criterion. In a world of imperfect data, however, it can be argued that the relevant SMP format is the one which isolates the variable whose shadow price is most crucial and least precisely known (Bruno, 1967).

issuing and this lack of complete control by the entrepreneur made it difficult to keep inventories always at the optimum level. A related problem arose when a piece of capital equipment required several component parts. If the parts did not arrive together because of administrative delay, then the whole equipment would be unutilized. As prophylactic measures entrepreneurs compensated for potential bottlenecks by holding excess inventories and by purchasing capital equipment before it was needed, both of which led to above optimal capital/labour rates in the sectors in which entrepreneurs could implement these strategies. A final problem in the factor market was the possibility of the government refusing an import licence and forcing the producer to buy a more expensive or inferior quality domestic good, although such restrictions do not appear to have been widely applied to capital goods. In sum, the presence of quantitative restrictions and government administration of the purchase of imported goods distorted the operation of the price mechanism in the market for capital goods[24].

The allocation of capital equipment was further distorted by the fact that interest rates were not uniform. The Law of Interest set maximum interest rates of 9 % up to 1957 and 11 % after that. At these rates demand for credit exceeded supply and there developed a "free market" outside the banking system. The private cost of capital between 1954 and 1960 has been estimated at 25 %, while in the same period the cost of capital obtained by industry via development budget loans was 8-9 % (Ben-Shahar, pp. 99, 45)[25]. We are not here concerned with all the misallocation arising from the complex interest rate structure, but only with that which arose from the government policy of allocating development loans to potential import-

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[24] Unfortunately, the conclusion of this paragraph is qualitative rather than quantitative, because any attempt to quantify the costs mentioned here would require considerable research at the microeconomic level. Nevertheless, these sources of misallocation do appear to have been significant at the enterprise level and have been commented upon by Israel's economists (e.g., Michaely 1973, ch. 6-3).

[25] Both figures are nominal rates, i.e., not allowing for inflation.

substitute producers. Thus, the chemicals, textiles and metals industries enjoyed an artificially high wage-rental ratio, which may have led to a sub-optimal labour intensity. A ranking of industrial sub-branches is available (Bruno 1962, p. 62) and, although it does not follow the same commodity classification as we have been using, chemicals and metals emerge as the most capital-intensive sectors apart from oil refining. This is, however, not too surprising since these sectors "are known to require very heavy investment per worker" (Bruno 1962, p. 61), and it must be noted that textiles appear among the least capital intensive sectors. Thus, a mere ranking of sectors by capital intensity is not a useful test of the sectoral misallocation of capital, because such a ranking will be dominated by the intrinsic technical requirement of each sector. A superior test would require comparison of sectoral factor intensities in Israel with the "normal pattern" in a country of Israel's size and endowments[26]. In the absence of such a test, we are left with a similar conclusion to that of the previous paragraph, i.e., misallocation almost certainly occured in the factor market as a result of the government's import substitution policy but it is difficult to quantify the extent of this misallocation.

In sum, the attempt to encourage industrialization via import substitution between 1950 and 1962 had definite costs in the form of misallocation of resources. The clearest case of this was the government's specific encouragement of the chemical, textile and metal industries, which were in fact the sectors where Israel's comparative advantage was least. Encouragement of these industries by means of development loans may also have led to their obtaining a greater share of capital than was economically warranted. More generally, import substitution may have been an inferior approach to easing the foreign exchange constraint, although this hypothesis was not

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[26] In view of Israel's relative abundance of human capital, such a test would ideally be based on a more sophisticated definition of factor intensity involving the breakdown of "capital intensity" into "human capital intensity" and "physical capital intensity" (cf. Lary). Estimates of these intensities will form the subject of future research.

thoroughly tested. Finally, the quantitative import controls associated with the government policy may have reduced producers' efficiency, i.e., their ability to remain close to their optimum factor proportions, as well as consumers' utility.

V

The aim of this part of the paper has been to critically examine the policy of encouraging industrialization by import substitution, which was pursued by the Israeli government up to February 1962. After a brief survey of reasons why such a policy was adopted, the extent of protection enjoyed by domestic producers was estimated in section II. Effective protection was high and often absolute, a finding which supported the characterization of government policy as one of import substitution. Previous judgements of the success of this policy have been that it did provide a substantial source of industrial growth through the 1950s, but also led to misallocation of resources. These judgements were tested in sections III and IV where it was found that the contribution to industrial growth of import substitution was rather small and that misallocation of resources did in fact exist. Thus our conclusion is that the government policy was not very successful, since it incurred costs and generated little benefit in return.

Limitations imposed on this conclusion by the techniques and the data used have been stressed in the text. A further limitation is that import substitution is a development policy, whereas in looking at the benefits of the policy we have only dealt with its contribution to growth. Thus measures such as those used in Table IV and V to calculate the contribution of import substitution to an industry's growth ignore the externalities and linkage effects which are an integral part of the theory of import substitution. This problem is partly overcome in the examination of costs of the policy, since the data in Table VI are based on an input-output framework. Nevertheless, even such a framework cannot take into account the full dynamic effect of externalities.

2. Policy towards Imports of Manufactured Goods since 1962

In February 1962 Israel's Minister of Finance announced a "programme for stabilizing the economy". The major features of this programme were devaluation of the Israeli pound and an undertaking to reduce the protection enjoyed by domestic producers against foreign competition:-

> "The government will gradually lower the walls of over-protection of domestic industry against imports. In order to make manufacturing and agriculture stand on the basis of cheap and efficient production, the government intends to restrict the ceiling of rates of protective tariffs and to eliminate the quantitative restrictions of imports. Local production will have therefore to compete with import goods." (from the text of the Minister of Finance's policy declaration).

The policy of import liberalization assumed in practice a two-stage procedure. The first stage involved a shift from administrative protection by quotas to tariffs and lasted from 1962 to 1968. The second stage, originally planned to be completed by 1975, involved reduction in the level and dispersion of the tariffs.

The aim of the remainder of the paper is to evaluate the government's success in forcing local production to compete with imports and the consequences for Israel's economic development of the import liberalization policy. The first section traces chronologically the progress of the first stage of liberalization and attempts to measure the proportion of Israel's industrial sector which had to face competing imports. Section II examines the progress made since 1968 in reducing the level and dispersion of tariff rates, and new estimates of the tariff rate as of Ist January 1972 are made for this purpose. The third section analyses the consequences of the policy for Israel's industrial development and concentrates primarily on the question of whether tariff reductions were

destructive to previously protected industries. Also contained in section III is a brief examination of the benefits of the liberalization policy in reducing misallocation of resources. Finally, an attempt is made in section IV to provide an overall assessment of the liberalization policy.

I

The import quota system existing in Israel before 1962 was defended on the grounds that it permitted the government to use discriminatory protection to hasten the structural change required for economic development. This was primarily interpreted in terms of encouraging the production of import substitutes. A few notable successes (e.g. rubber tyres) occurred and there was a general impression that import substitution was taking place in the mid-1950s. In the years after 1958, however, it became increasingly apparent that this was no longer the case. Once it became accepted that the balance of payments benefits of administrative protection were uncertain, policy makers' attention turned towards the costs of such protection, i.e., the ensuing misallocation of resources (according to static welfare criteria). Replacement of quotas by tariffs would reveal the extent to which distortion of the price system was present[27].

In terms of the domestic political decision process the New Economic Policy of 1962 could be seen as a stage in a long-running debate between proponents of the price mechanism and proponents of adminstrative judge-

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[27] The extent of distortion under a quota regime can also be calculated. The point is that such a calculation would not make the same impression on non-economists as a tariff rate does.

ment in determining the priorities and incentives to development. The leading proponents of the former view were the "Chicago" economists in the Hebrew University and the Bank of Israel, while the Ministry of Commerce and Industry was the centre for the latter view. The New Economic Policy was a victory for the economists. The war was, however, not over, and its further progress is the main theme of the present section.

Implementation of the liberalization policy was slow, and, although it is useful for benchmark purposes to associate a specific year with the policy, there was no clearcut change in 1962 itself. Import liberalization can in fact be traced back to 1956, but before 1962 it only applied to raw materials (Davidov, p. 49). After 1962 eligibility for liberalization was broadened, although agricultural products were excluded almost from the start (despite the Minister of Finance's statement quoted above) because of pressure from the Ministry of Agriculture and religious reasons (Tov, p. 30). The pace of liberalization of industrial imports in terms of the proportion of Israeli output affected can be seen in Table VIII. Tov has reservations about the reliability of the data in column 2, and since the last column is the ratio of two magnitudes from different sources it too may be suspect. Nevertheless the figures in this Table suggest the orders of magnitude. Output of liberalized products is only known for the year in which the liberalization occurred. Therefore we cannot add the components of column 3 to find the percentage of liberalized output. Instead, assumptions must be made of the rate of growth up to 1967 of previously liberalized goods. Tov's statement that by the end of 1967 some 45 to 60 % of the value of industrial output had been covered by the liberalization programme represents limits based on 0 % or 20 % growth rates for liberalized output (Tov, p. 31). The two questions which this raises are: (i) what goods were excluded from the programme and why? and (ii) why was the process so slow?

The above estimates indicate that a large proportion of manufacturing industries were not made to face liberalized imports. Some further liberalization occurred after 1967, but its extent was small and most of the remaining goods had by then been specifically exempted. A major sector which escaped liberalization was the food processing industry, which although categorised as part of manufacturing industry was included in the exemption of agricultural goods. The motor vehicle components industry was also specifically excluded from discussion, as were certain goods on which binding promises had been given to entrepreneurs that competing imports would be excluded for a specified time period. The broadest group to be excluded, representing some 20 % of industrial output, were those goods and services not traded in the world market. These are typically thought of as goods with high transport costs or repair services carried out in small shops, although it is unclear whether all the goods and services exempted on this ground were in fact non-tradable. No study has been done on this issue, but the argument has often been made that, if liberalization of those goods and services was irrelevant, then it would have done no harm to have proceeded with it, thus preventing any error of judgement as to what was in fact tradable. In sum, liberalization had by the late 1960s affected a significant proportion of manufacturing industry. On the other hand, many producers had escaped the need to face liberalized imports and remained under the shelter of administrative protection.

The liberalization process was distinguished by its slowness as well as its incompleteness. In order to understand why this was the case it is necessary to look at the machinery of liberalization. Implementation rested with a Public Commission consisting of representatives of several ministries (in particular, the Ministries of Finance and Commerce and Industry) and other organisations (especially the Histadrut and the Manufacturers' Association). The Public Commission discussed each

Table VIII

Liberalized Output as a Proportion of Total Industrial Output, 1962-7

	Industrial Output (I£m.)	Output of Products Liberalized During the Year (I£m.)	Liberalized Output as a Percent of Total Output
1962	3,785	183	4.8
1963	4,469	475	10.6
1964	5,262	406	7.7
1965	5,744	692	12.0
1966	5,767	331	5.7
1967	5,721	45	0.8

Note: output is excluding diamonds and is turnover at 1965 prices

Source: Tov, p. 31.

product individually on the basis of recommendations prepared by sub-committees consisting of government representatives and coordinated by the Ministry of Commerce and Industry. This machinery was not conducive to rapid progress because no timetable was set and separate consideration of each product ensured a lengthy process. Representation on the Public Commission of bodies fearing liberalization was also a retarding influence. A further retarding factor was the dominant role occupied by the Ministry of Commerce and Industry, which retained a predilection for discretionary trade policy. This Ministry had representatives on the Public Commission, including the Chairman; it controlled which goods were brought before the Commission; and it controlled the subcommittees responsible for preparing the material used in the Committee's discussions.

The influence of groups unconvinced of the virtues of the market mechanism not only slowed and limited the liberalization movement, but also tended to distort the original aims of the policy. A guideline often stated by members of the Commission was "efficiency rather than elimination", i.e., import liberalization should encourage efficiency within an industry but not lead to the industry's elimination. Thus the Commission became concerned with each industry's technical efficiency, but not with efficient allocation at a macroeconomic level, which had originally been the policy's prime intent[28]. In consequence, the Public Commission did not expect the tariffs which it set to be uniform, although an aim of the New Economic Policy had been to reduce the dispersion of tariff rates. The usual procedure for the Commission was to establish the domestic cost if production were "efficient", and then to set a tariff which made imports

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[28] There was some macro allocation effect, since new ventures were no longer offered total protection, but this was not at the front of the stage.

competitive with domestic production. The tariff rate could be set below the price-equalizing tariff to give domestic producers an added incentive, but on some goods the tariff was set higher to compensate domestic producers for non-price advantages possessed by imports (snob appeal, brand names, etc.) or as a reward for good behaviour (e.g., for agreeing to limit price increases). Between 1962 and 1967 the dispersion of effective rates of protection was high and showed no tendency to fall (Tov, p. 29).

An overview of the import liberalization programme at the end of its first stage presents a rather negative picture. Six years after the announcement of the New Economic Policy about half of Israel's manufactured output faced liberalized imports. Even this would have had only a small effect on resource allocation since each product had to face imports priced competitively with production conditions in Israel. Thus, if an Israeli entrepreneur was producing a good in which Israel had a comparative disadvantage but was producing it efficiently given Israeli conditions, then he would generally suffer no price disadvantage vis-a-vis competing imports.

In looking for reasons for this lack of progress in achieving the original aims of the New Economic Policy, one does not have to look further than the powerful positions occupied by interest groups attached to the pre 1962 system of administrative protection. A major cost of any policy which is adopted and maintained for a period of years is that it can build up such interest groups, both because some peiople are benefiting materially from the old system and also because many people's minds, perhaps especially among administrators, come to accept the existing procedure as best and fear that chaos will follow any fundamental change[29]. Thus in contemplating any major policy change great care must be taken that it is a correct move,

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[29] For an argument of how the "internal, self-contradictory logic" of a system of quota restrictions places administrators in a vicious circle of everincreasing ad hoc measures, see Bhagwati and Krueger.

in order to obtain some benefit to counter the cost of overcoming opposition to the policy and also to avoid the need to abandon the policy and go through the costly implementation procedure once more. Such considerations are often implicitly ignored by economists who sometimes appear to want to try a new policy to see if it will work and ignore the practical costs of policy changes.

II

Despite the slow pace of implementation of the liberalization policy between 1962 and 1967, the prospect in 1968 for those favouring liberalization was quite bright. A significant proportion of industrial output did face liberalized imports. Even if the tariff rates were not such as to improve macroeconomic resource allocation, they did serve to pinpoint areas with a high degree of protection[30]. This made it easier to obtain a consensus during the subsequent stage of reducing and equalising tariff rates. Furthermore, attitudes in the Ministry of Commerce and Industry were changing and new ministers were increasingly well-disposed towards liberalization. Finally, 1968 saw the recommencement of rapid economic growth after the 1965-7 recession, and this provided a more amenable environment for tariff reductions.

The commitment to reduce and equalise tariff rates appears to have been kept since 1968 and progress has been fairly rapid, despite interruptions caused by the military situation. An initial step was taken in November 1966 with a 10 % reduction in the tariffs on 330 imported manufacturers. In October 1968 a general 15 % reduction took place and this was followed

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30 The goal of placing all goods' tariff rates on comparable terms was thwarted to some extent by the retention of specific duties, although by the 1970s these only applied to about 5 % of total imports (primarily vehicles, agricultural goods, alcoholic beverages and tobacco).

in January 1969 by a progressive cut (by an average of 20 %) aimed at reducing the dispersion of rates. In 1969 the decision was taken to move progressively to a standard rate of protection on domestic production of I£ 5.5 per dollar of value added in 1975 (with the exception of consumer goods subject to snob appeal which would be permitted a rate of I£ 6 / $), i.e., an effective rate of protection of 57 %[31]. Since then tariff changes have occurred at frequent intervals: January 1970, January 1971, April 1972, June 1972, January and February 1973. An opposing influence was the imposition of a defence levy of 20 % on virtually all imports (excluding only a small number of government-purchased essential items and rough diamonds), but up until the October 1973 war the declared policy appeared to be on schedule for achieving its goal by 1975 (Michaely 1973, ch. 3.5)[32]. It is unclear at the time of writing what the consequences of the war and its aftermath will be for the liberalization policy[33].

No quantitative measures of the extent of the tariff reductions since 1968 are avaible, although Michaely's assertion that they were on schedule at such an advanced date as mid 1973 suggests that they have been large. In an attempt to fill this gap we made estimates of average tariff rates at the end of 1971 by BTN chapters (see appendix). The procedure followed was to calculate the nominal and valorem tariff on each item and then to aggregate the calculated rates weighted by the value of 1971 imports. The

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31 Adoption of this goal was linked with Israel's negotiations with the EEC, which will be discussed in greater detail in a later paper dealing with the export side of Israel's foreign trade.

32 After the August 1971 devaluation of the Israeli pound from I£ 3.5 / $ to I£ 4.2 / $ the target was reset at I£ 6.5 / $, i.e., an ERP of 55 %.

33 The short-run consequences of the war have been adverse for import liberalization policy, since tariffs have been increased and an import deposit scheme initiated for all imports of value greater than I£ 5,000, but it is unclear how permanent these measures will prove to be.

weighting system used is far from satisfactory since it will produce biased results; high tariffs on price elastic goods will receive too little weight and low tariffs on such goods will receive too much weight. The reason for adopting this weighting system is that any ideal system, e.g., weighting by what imports would be in the absence of any trade barriers, would involve a much more complicated exercise, while the estimates given here do at least suggest orders of magnitude.

The estimates in the appendix are summarized for the products of twelve industries in Table IX, where they are compared with Tov's estimates for 1967 (i.e., at the completion of the first stage of liberalization). The two sets of estimates are not on identical bases, since Tov uses as weights the value saved in producing commodity x in Israeli pounds. The difference in weighting systems probably biases the 1971 estimates downwards vis-a-vis the 1967 estimates. Such a bias would, however, not be of sufficient order of magnitude to explain the large reduction in the total tariff rate for industrial goods revealed in Table IX. The major conclusion is that the liberalization policy did indeed produce a considerable reduction in the height of tariffs facing imported industrial goods. Tariff reductions were applied to all branches except non-metallic minerals and products, where tariffs on ceramic and glass products remained high (105 % and 51 % respectively). The largest reductions were in electrical and transport equipment[34].

The liberalization measures were intended to reduce the dispersion of tariff rates as well as their height. To test whether this did in fact occur, the coefficient of variance was calculated for the two columns of Table IX. By this measure the dispersion of tariff rates did fall over

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[34] The estimates for transport equipment are less reliable than those for other branches, because large number of specific duties on the goods make the tariff rates difficult to estimate. Tov omits customs duties on imported vehicles from his estimates, which clearly leads to considerable divergence between the coverage of the 1967 and 1971 estimates in Table II.

Table IX

Nominal Tariffs by Branch at End of Year, 1967 and 1971 (%)

	1967	1971
Food processing	89.3	58.3
Textiles & Clothing	101.0	35.2
Wood & products	63.9	38.9
Paper & products	55.6	28.4
Leather & footwear	57.7	26.0
Rubber & plastics	88.7	26.3
Chemicals	72.9	13.8
Non-metallic minerals & products	63.3	66.2
Metals & products	48.1	14.1
Machinery	55.8	16.2
Electrical equipment	133.2	23.8
Transport equipment	115.0	13.9
Miscellaneous	90.3	29.8
TOTAL	78.1	20.7
DISPERSION	.319	.249

Note: the measure of dispersion used is:

$$\sqrt{\frac{\Sigma\ (x_i - \bar{x})^2\ a_i}{\bar{x}\ \Sigma\ a_i}}$$

where x_i = the nominal tariff in branch i, $\bar{x}$ = a weighted average = $\frac{\Sigma\ x_i\ a_i}{\Sigma\ a_i}$. The weights, a_i, are 1971 imports.

Sources: 1967 tariffs are from TOV, p. 36; 1971 tariffs and import values are from the appendix and sources cited therein.

the period. A more thorough test would involve a much greater degree of disaggregation since large variations may be hidden within the commodity groups, but this was not possible with Tov's published data. Examination of the estimates in the appendix and of the individual tariff rates on which they are based suggests that by the end of 1971 within-group dispersion was large only with regard to beverages and tobacco products. This contrasts with the maximum nominal tariffs quoted by Tov, which are over 100 % in all branches except machinery (cf. Table III above).

The discussion so far has been in terms of nominal tariffs, but the more economically meaningful measure when dealing with distortions resulting from protection is the effective tariff rate. Estimates of effective tariffs in 1967 are given in Table III and it can be seen that they are considerable higher than the nominal tariffs. An attempt was made to estimate effective tariffs for 1971 using the appendix data and Chen's input-output tables for 1968/9, but the results were unsatisfactory because even Chen's most desaggregated tables (30 x 30) were insufficiently detailed[35]. Examination of the nominal tariff rates in the appendix reveals that effective tariffs were certainly higher than nominal tariffs for most goods in 1971. For example, the average nominal tariff on raw hides and leather was 15.6 % (and most items in this category were duty free), while that on leather goods was 83.6 %. A similar pattern of higher nominal tariffs on finished goods is visible with respect to food, chemicals, paper, clothing and textiles and base metals. Thus, it can be said with confidence that a significant difference between nominal and effective tariffs remained in 1971, although no quantitative measure is available.

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[35] The insufficient disaggregation was reflected in large diagonal elements. Thus, for example, the imported inputs to the "leather and products" industry were mainly "leather and products" and the estimated effective tariff did not differ greatly from the nominal tariff.

In sum, the policy of import liberalization has followed two fairly distinct stages. In the first, which lasted until the end of 1967, slow but steady progress was made in replacing quota restrictions by tariffs, but there was little change in the level or structure of protection. In the second stage substantial progress has been made in reducing the level and the dispersion of nominal tariff rates. In general this should also have reduced the level of effective protection, but in the absence of estimates of effective tariffs nothing definite can be said, except that effective rates of protection remained higher than nominal rates.

III

After having described the process of import liberalization an attempt will now be made to evaluate the consequences of the policy. The conflict of views described in the previous sections can serve as a useful framework of analysis. To be examined are, on the one hand, the protectionists' fears that liberalization would eliminate some Israeli producers rather than make them more efficient and, on the other hand, the reformers' hopes that competition would remove much of the misallocation which the import substitution policies of the 1950s had introduced into the economy.

In testing the hypothesis that the import liberalization programme led to greatly increased imports of manufactured goods with damaging effect on domestic producers, the major problem is the absence of ceteris paribus conditions. In particular, the years 1965-7 saw the slowest GNP growth rates in Israel's history as a planned deflation (to reduce the trade deficit) was turned into a recession by a series of unanticipated factors. Thus, if we look at Israel's commodity imports, we find no break in their rate of growth in 1962, but a rapid increase in this rate occurs after 1967; e.g., the value of commodity imports only increased by 50 % 1960-7 but by 264 % 1967-1972. These results confirm our categorization of the period up to 1967 as one of replacing quotas by tariffs without reducing the level of

protection and of the period starting in 1968 as one of substantial tariff reductions. They also, however, reflect that 1965-7 were slow growth years (imports actually fell in 1967) and that since the late 1960s the dollar has been declining in value. It is therefore rather difficult to separate the effects of tariff policy from these other influences on import performance.

The value of manufactured imports is of greater interest than that of total inputs in evaluating the liberalization programme, since the incidence of this programme fell on the manufacturing sector. The same pattern of a significant increase in the rate of import growth after 1967 is revealed here. It should be pointed out that the most rapid growth rate for a single year is in 1967-8, which is before the tariff cuts could have had any significant effects and clearly reveals the major recovery elements released after the recession had come to an end[36]. Further support for the preponderent influence of the level of domestic economic activity (y) in determining the level of manufactured imports (m) is obtained from regressing the two variables[37]. For 1960-72 the relationship is positive and strongly significant, although serial correlation is great too: -

(1) $\quad m = \underset{(49.737)}{53.088} + \underset{(0.003)}{0.052}\ y \qquad R^2 = 0.955 \qquad d = 0.88$

This is in itself unsurprising, but it is interesting to note that division

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[36] The same observation applies to total commodity imports.

[37] Data for m are taken from Table X row 6 (manufactured imports are defined as S. I. T. C. groups 5-8) and for y Israeli GNP in I£m. is used. It should be noted that the purpose of this exercise is not to use the estimated coefficients, which would be a debatable procedure in view of the expected high serial correlation, but to look for any major diversions from the regression line in order to gain an impression as to whether they are associated with the domestic business cycle or with government policy.

of the period into two subperiods (1960-7 and 1968-72) or addition of a dummy variable ($k = 0$ if $t \leq 1967$ and $k = 1$ if $t \geq 1968$) did not improve the results. Even more interesting is the fact that the greatest divergence between actual and estimated (using m from (1)) values of m occurred in the years 1966 and 1967, which suggests that the largest deviations from the linear relationship occurred in response to domestic cyclical fluctuations rather than in response to tariff changes.

Before leaving the aggregate data on manufactured imports a final comparison can be made. Domestic industrial output rose from I£ 845m. in 1960 to I£ 2,865m. in 1968 and I£ 5,932m. in 1972[38]. Even allowing for differences in coverage and the decline in value of the Israeli pound against the dollar the rate of growth of domestic output of manufactured goods appears to exceed the rate of growth of imports of these goods. This suggests that the ratio of imports to domestic supplies has decreased even after the explicit pursuit of import substitution had been abandoned[39]. This issue will not be followed up here because the extent of import substitution, if it occurred, was small and because there is no government policy of encouraging import substitution to be evaluated in the 1962-72 period. The fact that import substitution appears to be positive, and not strongly negative, does, however, cast a bad light on the policy of the 1950s when substantial protection was offered domestic producers and yet the amount of actual substitution was only small then too.

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[38] Statistical Abstract of Israel 1973, p. 169. These figures represent the contribution of mining and manufacturing to NDP at factor cost.

[39] This does not, of course, mean that import substitution had to be positive in all sectors. In fact, it could even be negative in all sectors and there still be positive import substitution at the aggregate level, if Chenery-type measures are being used (cf. Desai). The aggregate figure, however, does at least suggest that negative import substitution did not occur on a large scale.

Although the post 1968 tariff reductions were not themselves responsible for a flood of manufactured imports, they did have some effect on such imports. Manufactured imports as a proportion of total commodity imports increased substantially after 1967 (Table X). This may partly reflect increased demand for manufactured goods as the development process moves on, but the suddenness of the increase suggests that an exogenous shock such as the tariff reductions may be the appropriate explanation.

In addition to affecting the composition of imports between manufacturing and other broad groups we would also expect the liberalization programme to alter the composition of manufactured imports. In particular, we would expect imports of goods receiving the largest reductions in effective tariffs to exhibit the fastest growth rates once the tariff cuts had begun[40]. The data necessary for examining this hypothesis are given in Table XI. The commodity groups are ranked according to their 1967 effective tariff rates and their rate of import growth 1968-72[41]. The expectation is that goods ranking highly on

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[40] Ideally, of course, we would like to compare actual 1972 import levels with what they would have been in 1972 had the liberalization programme not been implemented rather than with their 1968 levels, but this is a much more difficult exercise.

[41] The 1967 effective tariff rate is used as a proxy for the size of the reduction in effective tariffs because no effective tariff data are available for later years (cf. section II). If the government policy of reducing the dispersion of rates was applied evenly this would be a perfect proxy, but governments' declared policies do not always work out as intended. An alternative proxy would be the changes in the nominal tariffs given in Table IX. A ranking according to the absolute or percentage change in nominal tariff rates would differ little from that in column 2 of Table XI; the major variations would be a lower ranking for textiles and clothing and for non-metallic mineral products, while other commodity groups' rankings were marginally improved. The ranking according to 1967 effective tariff rate is retained because effective tariff rates are economically more significant than nominal rates and because the analysis in section II supported the assumption that the governments' declared policy of reducing the dispersion as well as the height of tariff rates was realized.

Table X

Commodity Imports into Israel 1960-72 (U.S.$m.)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Total commodity imports (A)	503	592	635	674	826	832	835	755	1089	1332	1462	1833	1983
of which:-													
Chemicals	24	30	36	36	42	45	48	52	72	87	100	116	134
Manufactured Goods	137	156	182	210	247	251	268	257	377	454	472	560	701
Machinery and Transport Equipment	143	190	182	177	251	232	186	161	278	387	439	613	602
Miscellaneous Manufactures	9	13	14	18	25	30	34	30	41	61	70	70	81
Total Manufactured imports (B)	313	389	414	441	565	528	536	500	768	989	1081	1359	1518
B ÷ A	62 %	66 %	65 %	65 %	68 %	63 %	64 %	66 %	71 %	74 %	74 %	74 %	77 %

Note: rows 2-5 are S.I.T.C. one digit groups and row 6 is the sum of S.I.T.C. group 5-8.

Sources: Statistical Abstract of Israel, various years.

one count should do so on the other too, but this is not borne out. The Spearman rank correlation coefficient (p) was 0.228, which indicates a positive relationship between the two rankings, but a very weak one. The clearest contradictory result is for clothing, which had the highest effective protection rate in 1967, but during the reduction and equalisation of tariffs up to 1972 clothing imports grew more slowly than other groups' imports[42]. There may be some problems of aggregation, e.g., imports of those clothing items with previously high tariffs may have grown rapidly but been offset in the aggregate figure by slow-growing items, but this would appear insufficient to explain the low p value. Thus, we are left with the conclusion that reducing the level and dispersion of tariff rates did not significantly increase imports of previously heavily protected goods. A corollary to this is that many of the high effective tariffs up to 1967 were unnecessary for protection purposes because the imports were not price elastic in the relevant range.

If the worst fears of the anti-liberalization faction were to be realized, w would expect to find that domestic production of goods with high effective tariffs in 1967 would increase slowly, if at all, after that date. This hypothesis can be tested with the data from Table XI. The correlation between a ranking according to 1967 effective tariff rate and growth in industrial production for 1968-72 was p = 0.780. This coefficient is of the opposite sign to that predicted by the hypothesis and is, furthermore, large[43]. Reservations must again be made concerning the aggregation

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[42] The particular proxy used for the size of tariff reduction may overstate the magnitude in the case of clothing (cf. previous footnote). If industries were ranked in Table XI by absolute reduction in nominal tariff clothing and textiles would be third, an if ranked by percentage reduction in nominal tariffs they woul be seventh. It should be noted that if either of these alternative rankings were used the value of p would be higher, although the effect of the lower ranking of non-metallic mineral products would to some extent offset the effect of the lower textile and clothing ranking.

[43] It is significant at the 1 % level.

Table XI

Effective Tariff Rate in 1967 and the Rate of Growth of Imports, and production 1968-72 by industrial commodity group

Tov's Classification	Effective tariff (%)	Rank	S.I.T.C. Classification	Rate of Growth of Imports	Rank	Industrial Production 1972 (1968 = 100)	Rank
Textiles	240.6	3	65	73 %	7	138	9
Clothing	396.7	1	84	(a)	13	235	1
Wood and products	76.5	12	63	8 %	12	135	10
Paper and products	74.2	13	64	54 %	11	134	11
Leather and footwear	78.0	11	61/85	72 %	8	119	13
Rubber and plastics	118.5	6	62	57 %	9	193	4
Chemicals	132.8	5	5	85 %	6	166	6
Nonmetallic mineral products	79.8	10	66	98 %	5	159	7
Basic metals	84.8	9	67/68	57 %	9	131	12
Metal products	104.3	7	69	308 %	1	177	5
Machinery	97.0	8	71	120 %	2	142	8
Electrical equipment	253.9	12	72	118 %	3	193	3
Transport equipment	179.5	4	73	111 %	4	200	2

Note (a): Clothing imports were less in 1972 than in 1968, but this reflects the exceptionally high value for 1968 ($ 3.8m., cf. $ 1.8m. in 1967 and $ 1.9m. in 1969). If 1969 had been taken as the base year, the growth of clothing imports at 52 % would have been among the lowest growth rates.

Sources: effective tariffs are from Tov, p. 33; import growth rates are calculated from data in Statistical Abstract of Israel 1973, pp. 202-5, and 1969, pp. 202-5; indices of industrial production from Statistical Abstract of Israel 1973, pp. 438-9.

level, but the conclusion is rather clear-cut; reduction in tariffs not only didn't hurt domestic production, but even appears to have been beneficial.

The last result clearly refutes the argument that liberalization would eliminate domestic production in heavily protected industries, but it is difficult to put a solid positive interpretation on the finding. One argument would be to relate the previously high protection to future growth by the infant industry argument, i.e., protection enabled industries to overcome an initial competitive disadvantage and build up their efficiency which was just ready to be exploited when the tariffs were reduced. Such an argument is difficult to test without detailed productivity figures at different points in time, which are not yet at hand. An alternative argument would look to the demand side and explain the growth in output by factors exogenous to the tariff changes. In this argument the tariff changes play no causal role, but it is then possible to explain why the liberalization programme met relatively little opposition in the 1968-72 period. These are, at best, vague hypotheses put forward in response to an interesting finding and will be pursued no further at this stage.

So far we have examined whether the protectionists' fears regarding liberalization were fulfilled; in a sense, this has been a study of the "costs" of the policy. Turning now to the benefits side, we find that it is even more difficult to come to any firm conclusions with the tools at hand[44]. The major airm of the liberalization programme at its inception was to improve resource allocation at the macroeconomic level, while later emphasis was on improving efficiency at the industry level. To analyse the first of these

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[44] Quantitative studies of the effects of trade liberalization have concentrated on the static welfare effects, i.e., the benefits of shifting to a higher utility surface. Since we are interested in the present context in the effect of trade liberalization on future productive potential, the static welfare approach is unhelpful (cf. Leamer a. Stern, ch. 8. for a summary of the methodology and results obtained).

issues would require a general equilibrium model of the Israeli economy, while the latter would require productivity studies at the industry level.

A partial answer to the question of whether liberalization improved resource allocation could be obtained from estimates of Israel's comparative advantage. Published estimates of domestic resource costs are available for 1958-60 (Bruno 1962). They are admittedly old for the present purpose, but do provide a guide as to Israel's comparative advantage. The DRCs are highest for chemicals, clothing and textiles - all heavily protected until 1967. Tariff liberalization should have reduced distortions in the form of above optimal production in these sectors, although the growth rates of both imports and domestic production of these goods were not exceptionally low 1968-72. It is the author's intention to make up to date and detailed estimates of Israel's comparative advantage, and when this has been done firmer conclusions may be possible. At this stage all that can be said is that liberalization probably removed the worst excesses of misallocation under the protectionist trade regime (cf. part I of this paper), although it is not clear to what extent resource allocation was improved[45].

IV

The policy of import liberalization announced in 1962 has, albeit slowly, come to affect a significant proportion of Israel's manufacturing sector. The major fear regarding the effects of the liberalization, i.e., the fear that a flood of imports would drive some domestic producers out of business has been proved to be without foundation. The only cost of

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[45] One source of reallocation which could be expected is between markets, i.e., the implicit disincentive to seek export markets contained in artificially high domestic prices should have been reduced after 1968. This was not the case before 1968 because the 1962 devaluation package affected import prices by more than export prices and opened a gap between the effective exchange rates on imports and on exports which was not closed until after the 1967 war (Amiel, p. 32). Unfortunately data on effective exchange rates for the 1970s are not yet available and it is thus not possible to determine whether a gap has opened up in the opposite direction.

the policy appears to have been the relatively minor one of tying down skilled manpower in examining the proposed tariffs on an item by item basis. The principal benefit from the policy has been a reduction of the misallocation of resources which prevailed under the protectionist regime, although it is difficult to quantify the extent of this reduction. There is also the minor benefit of greater ease of administration than under the old scheme whereby a permit had to be issued and an exchange rate specified for every import transaction.

The surprising finding that those goods with the heaviest protection before liberalization tended to enjoy the most rapid growth in domestic output 1968-72 suggests that some intra-industry benefits followed from the policy. The further finding that import substitution was in the aggregate positive after 1962 implies that the liberalization policy had little effect on the pace of import substitution. The inference may be drawn from the last argument that the protectionist policy (and resulting misallocation of resources) of the 1950s was unnecessary to obtain the small amount of import substitution which actually took place in that decade. This extension is not, however, necessarily valid, since the ceteris paribus conditions changed. The counterargument could be made that the import substitution behind barriers in the 1950s was a necessary precondition to bring Israeli industry up to the efficiency levels where it could make import substitution progress without protection in the 1960s (and could also make progress in export markets)[46].

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[46] Compare, for example, Tyler's work on Brazil. Industrial growth rates have been higher there during the export expansion era since the mid 1960s than they were during the import substitution era of the 1950s. Nevertheless, Tyler suggests that the import substitution policy was not necessarily misguided, since it may have been the only way to get domestic industry to the level of competitiveness required to make a success of export expansion (i.e., via economies of scale, learning effects, etc.). A similar argument, stressing the learning effects (especially among entrepreneurs), has been made on a more general level by Donges.

Import liberalization policies have often been advocated by economists, but are opposed by the country's decision-makers on the grounds that, although they are theoretically attractive, they are impractical on a unilateral basis. Government officials fear that increased imports will intensify balance of payments problems, while entrepreneurs fear the competition from cheaper imports. In the Israeli case, the economists had a difficult time getting the policy accepted and then having it implemented as intended, but after the policy had been implemented in a significant way the fears of its opponents proved to be generally groundless.

APPENDIX: Summary of Israeli Tariff Rates by BTN Group (Dec.31. 1971)

Section I. Live animals and goods of animal origin			
Ch. 1. Live animals	1,314	10	0.8 %
Ch. 2. Meat	31,877	12,735	38.8 %
Ch. 3. Fish, etc.	5,746	773	13.5 %
Ch. 4. Dairy produce, eggs and honey	7,243	382	5.3 %
Ch. 5. Products of animal origin nes.	500	92	18.4 %
Sec. I. Total	46,680	13,992	30.0 %
Section II. Plants and their products			
Ch. 6. Live plants, bulbs, etc.	281	62	22.2 %
Ch. 7. Edible vegetables, roots and tubers	3,803	558	14.7 %
Ch. 8. Edible Fruits and nuts	2,856	2,905	101.7 %
Ch. 9. Tea, coffee, spices, etc.	9,888	8,940	90.4 %
Ch.10. Cereals	83,911	849	1.0 %
Ch.11. Milling products, starches, etc.	2,986	110	3.7 %
Ch.12. Oil seeds and fruit; straw and fodder	58,190	1,432	2.5 %
Ch.13. Raw vegetable material for tanning and dyeing	747	179	24.0 %
Ch.14. Vegetable plaiting and carving materials	330	13	3.9 %
Sec. II. Total	162,992	15,048	9.2 %
Section III. Fats and oils			
Ch.15. Animal and vegetable fats and oils, waxes	8,282	790	9.5 %
Sec. III. Total	8,282	790	9.5 %

Section IV. Products of the food and tobacco industry			
Ch.16. Preparations of meat, fish, etc.	781	303	38.8 %
Ch.17. Sugars and sugar confectionery	22,123	11,247	50.8 %
Ch.18. Cocoa and cocoa preparations	2,663	1,696	63.7 %
Ch.19. Preparations of flour and pastry products	123	113	91.9 %
Ch.20. Preparations of vegetable and fruit	1,496	636	42.5 %
Ch.21. Misc. edible preparations	1,722	984	57.1 %
Ch.22. Beverages, spirits and vinegar	1,191	2,934	246.4 %
Ch.23. Food industry waste, prepared fodder	4,447	26	0.6 %
Ch.24. Tobacco	5,918	5,653	95.5 %
Sec. IV. Total	40,464	23,592	58.3 %

Section V. Minerals			
Ch.25. Salt, sulphur, lime, cement, etc.	15,950	5,278	33.1 %
Ch.26. Metallic ores, slag and ash	106	3	2.8 %
Ch.27. Mineral fuels, oils and their products	90,432	1,142	1.3 %
Sec. V. Total	106,488	6,423	6.0 %

Section VI. Chemicals and allied products			
Ch.28. Inorganic chemicals	13,297	379	2.9 %
Ch.29. Organic chemicals	35,958	45	0.1 %
Ch.30. Pharmacentical goods	11,315	4,812	42.5 %
Ch.31. Fertilizers	1,668	141	8.5 %
Ch.32. Tanning extracts, paints, inks, etc.	9,421	1,407	14.9 %
Ch.33. Perfumery and cosmetic preparations	1,096	597	54.5 %
Ch.34. Cleaning, polishing preparations	3,626	1,681	46.4 %
Ch.35. Albuminoidal substances and glues	1,300	242	18.6 %
Ch.36. Pyrotechnic products, matches, etc.	305	48	15.7 %
Ch.37. Photographical and cinematographical goods	6,226	1,341	21.5 %
Ch.38. Misc. chemical products	18,024	3,432	19.0 %
Sec. VI. Total	102,236	14,125	13.8 %

Section VII. Artificial resins, plastics, rubber and rubber goods			
Ch.39. Artificial resins, plastics, etc.	24,348	7,592	31.2 %
Ch.40. Rubber, synthetic rubber, etc.	16,309	3,100	19.0 %
Sec. VII. Total	40,657	10,692	26.3 %

Section VIII. Hides, skins, leather and their products			
Ch.41. Raw hides, skins and leather	8,490	1,320	15.6 %
Ch.42. Leather goods, etc.	803	671	83.6 %
Ch.43. Furs, artificial furs, etc.	2,858	885	31.0 %
Sec. VIII. Total	12,151	2,876	23.7 %

Section IX. Wood, cork and products			
Ch.44. Wood and products	42,030	16,358	38.9 %
Ch.45. Cork and products	241	68	28.2 %
Ch.46. Manufactures of straw, etc.	51	42	82.4 %
Sect. IX. Total	42,322	16,468	38.9 %

Section X. Paper and products			
Ch.47. Paper-making material	10,272	35	0.3 %
Ch.48. Paper, paperboard and products thereof	33,692	13,295	39.5 %
Ch.49. Books, newspapers, etc.	4,571	433	9.5 %
Sect. X. Total	48,535	13,763	28.4 %

Section XI. Textiles and clothing			
Ch.50. Silk	393	70	17.8 %
Ch.51. Man-made fibres (continuous)	39,589	16,051	40.5 %
Ch.52. Metallised textiles	10	5	50.0 %
Ch.53. Woll and other animal hair	7,680	290	3.8 %
Ch.54. Flax and ramie	324	52	16.1 %
Ch.55. Cotton	4,054	818	20.2 %
Ch.56. Man-made fibres (discontinuous)	7,300	773	10.6 %
Ch.57. Vegetable textile materials nes.	819	164	20.0 %
Ch.58. Pile, chenille, net lace fabrics, etc.	2,988	2,325	77.8 %
Ch.59. Wadding, rope and textiles for industry	4,038	1,176	29.1 %
Ch.60. Knitted or crocheted goods	3,224	2,845	88.2 %
Ch.61. Apparel and clothing accessories of textiles	966	390	40.4 %
Ch.62. Made-up textile articles nes.	2,278	1,076	47.2 %
Ch.63. Old clothing and textile articles	531	101	19.0 %
Sect. XI. Total	74,194	26,136	35.2 %

Section XII. Footwear, headgear, umbrellas, feathers, hair, etc.			
Ch.64. Footwear	1,721	877	50.7 %
Ch.65. Headgear	188	92	48.9 %
Ch.66. Umbrellas, whips, etc.	138	95	68.8 %
Ch.67. Feathers, down, human hair, etc.	160	88	55.0 %
Sec. XII. Total	2,214	1,152	52.0 %

Section XIII. Non-metallic minerals and products (non-precious)			
Ch.68. Stone, plaster and cement	1,798	737	41.0 %
Ch.69. Ceramic products	4,355	4,576	105.1 %
Ch.70. Glass and glassware	7,864	3,969	50.5 %
Sec. XIII. Total	14,017	9,282	66.2 %

Section XIV. Precious and semi-precious stones and metals, coins			
Ch.71. Precious and semi-precious stones and metals	253,860	1,099	0.4 %
Ch.72. Coin	2	1	50.0 %
Sec. XIV. Total	253,862	1,100	0.4 %

Section XV. Base metals and products			
Ch.73. Iron, steel and products	144,677	18,949	13.1 %
Ch.74. Copper and products	16,940	1,774	10.5 %
Ch.75. Nickel and products	755	47	6.2 %
Ch.76. Aluminium and products	16,017	2,027	12.7 %
Ch.77. Magnesium, beryllium and products	118	5	4.2 %
Ch.78. Lead and products	1,012	113	11.2 %
Ch.79. Zinc and products	1,789	61	3.4 %
Ch.80. Tin and products	787	40	5.1 %
Ch.81. Base metals and products nes.	532	27	5.1 %
Ch.82. Tools, spoons, forks of base metals	7,241	2,904	40.1 %
Ch.83. Misc. articles of base metals	4,011	1,463	36.5 %
Sec. XV. Total	193,879	27,140	14.1 %

Section XVI. Machinery and electrical goods			
Ch.84. Boilers, mechanical appliances and parts	197,810	32,069	16.2 %
Ch.85. Electrical machinery and equipment	96,355	22,884	23.8 %
Sec. XVI. Total	294,165	54,953	18.7 %

Section XVII. Vehicles and parts			
Ch.86. Railway locomotive equipment, etc.	1,557	2	0.1 %
Ch.87. Vehicles net for railway, and parts	96,953	41,843	43.2 %
Ch.88. Aircraft, equipment, and parts	59,760	35	0.1 %
Ch.89. Ships, boats and floating structures	143,859	15	0.0 %
Sec. XVII. Total	302,129	41,895	13.9 %

Section XVIII. Optical, scientific etc. apparatus			
Ch.90. Photographic and medical instruments	34,133	5,192	15.2 %
Ch.91. Clocks, watches and parts thereof	3,153	1,091	34.8 %
Ch.92. Musical instruments and sound recorders	4,585	1,866	40.7 %
Sec. XVIII. Total	41,871	8,149	19.5 %
Section XIX. Weapons			
Ch.93.	--	--	--
Section XX. Miscellaneous goods			
Ch.94. Furniture	7,270	5,262	72.4 %
Ch.95. Carving, moulding materials and goods	189	23	12.2 %
Ch.96. Brooms, brushes, etc.	416	203	48.3 %
Ch.97. Toys, games, sporting goods	2,445	1,451	59.4 %
Ch.98. Misc. manufactured goods	2,133	1,090	51.1 %
Sec. XX. Total	12,453	8,027	64.5 %
Section XXI. Objects of art, collectors' pieces and antiques			
Ch.99.	5,659	0	0
Sec. XXI. Total	5,659	0	0

Note: col. (1) = value of imports in 1971 ($ 000), col. (2) = value of tariffs due on these imports at the rates existing on 31st December 1971 ($ 000), col. (3) = (2) ÷ (1).

Method and sources: Data on import values and quantities (in the case of goods with specific tariffs) were taken from Israel Central Bureau of Statistics: Foreign Trade Statistics Quarterly IV, No. 4, January-December 1972. The import data were multiplied by the tariff rate on each item, as given in Bundesstelle für Außenhandelsinformation: Deutsches Handels-archiv, 1972, 1. Januarheft, pp. 1-235. The resulting import and tariff values were aggregated by BTN chapter and the former was divided by the latter to give the average nominal tariff for each chapter. For criticism of the weighting system (i.e., value of current imports) see text, section II.

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